

Journey to the Center of the Earth

Jules Verne



Project Gutenberg

Table of Contents

[I](#)

[II](#)

[III](#)

[IV](#)

[V](#)

[VI](#)

[VII](#)

[VIII](#)

[IX](#)

[X](#)

[XI](#)

[XII](#)

[XIII](#)

[XIV](#)

[XV](#)

[XVI](#)

[XVII](#)

[XVIII](#)

[XIX](#)

XX

21st

XXII

XXIII

XXIV

XXV

XXVI

XXVII

XXVIII

XXIX

XXX

XXXI

XXXII

XXXIII

XXXIV

XXXV

XXXVI

XXXVII

XXXVIII

XXXIX

XL

XLI

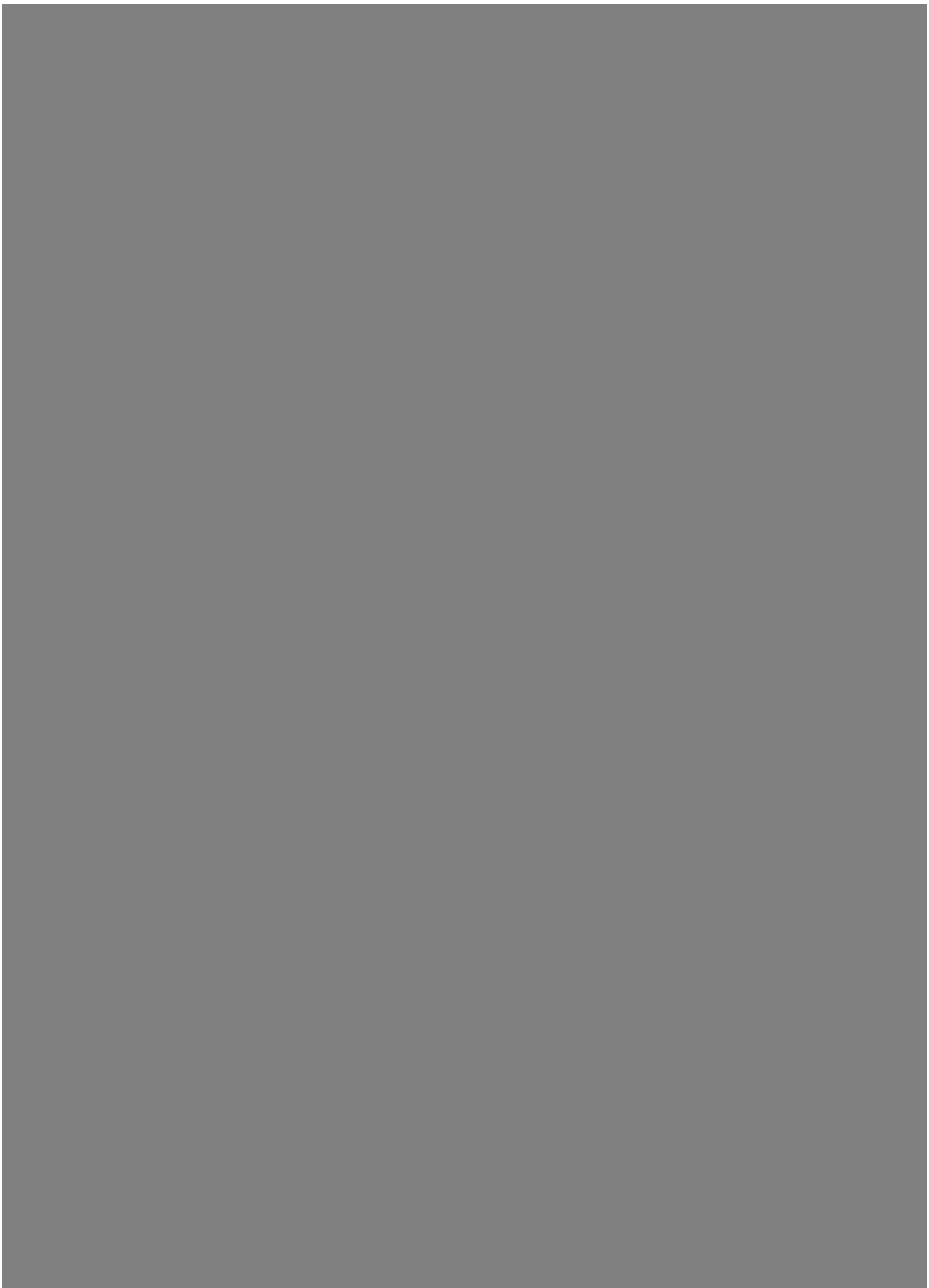
XLII

XLIII

XLIV

XLV

THE FULL PROJECT GUTENBERG™ LICENSE



Journey to the Center of the Earth

Jules Verne

Project Gutenberg

The Project Gutenberg eBook of Journey to the Center of the Earth

This eBook is for the use of anyone anywhere in the United States and most other parts of the world at no cost and with almost no restrictions whatsoever. You may copy it, give it away or re-use it under the terms of the Project Gutenberg License included with this eBook or online at www.gutenberg.org . If you are not located in the United States, you will have to check the laws of the country where you are located before using this eBook.

Title : Journey to the Center of the Earth

Author : Jules Verne

Release date : December 1, 2003 [eBook #4791]
Most recently updated: May 12, 2023

Language : French

Other information and formats :
www.gutenberg.org/ebooks/4791

Credits : Carlo Traverso, Robert Rowe, Charles Franks
and the Online Distributed Proofreading Team.
Revised by Richard Tonsing.

*** START OF THE PROJECT GUTENBERG EBOOK JOURNEY TO THE
CENTER OF THE EARTH ***

We thank the Bibliotheque Nationale de France that has made
available

the image files at [www://gallica.bnf.fr](http://www.gallica.bnf.fr), authorizing the preparation of the text through OCR.

We thank the National Library of France for making the images available in www.gallica.bnf.fr, and for giving permission to use them to prepare this text.

Editorial note: We emphasize with *X* the runes that Verne emphasizes with serifs, and translitterates with uppercase.

Editor's note: Runes that Verne recorded with serifs, and transcribed with capital letters, are represented with *X*.

Jules Verne

JOURNEY TO THE CENTER OF THE EARTH

I

On Sunday, May 24, 1863, my uncle, Professor Lidenbrock, hurried back to his small house located at number 19 Königstrasse, one of the oldest streets in the old quarter of Hamburg.

Good Martha must have thought she was very late, because dinner was only just beginning to cook on the kitchen stove.

"Well," I said to myself, "if he's hungry, my uncle, who is the most impatient of men, will cry out in distress."

"Already Mr. Lidenbrock!" exclaimed the astonished maid Martha, half-opening the dining room door.

—Yes, Martha; but dinner has the right not to be cooked, for it is not yet two o'clock. The half-hour has barely struck at Saint-Michel.

—So why is Mr. Lidenbrock coming back?

—He will probably tell us.

"There he is! I'm off. Mr. Axel, you'll talk some sense into him."

And good Martha returned to her culinary laboratory.

I was left alone. But reasoning with the most irascible of professors was something my somewhat indecisive nature didn't allow. So I was preparing to cautiously return to my small upstairs room when the street door creaked on its hinges; large feet made the wooden stairs groan, and the master of the house, crossing the dining room, immediately rushed into his study.

But, during this brief interlude, he had thrown his nutcracker-headed cane into a corner, his wide-brimmed hat with upturned fur onto the table, and these resounding words to his nephew:

"Axel, follow me!"

I hadn't even had time to move before the professor was already shouting at me with a loud, impatient tone:

"Well! You're not here yet?"

I rushed into the study of my formidable master.

Otto Lidenbrock was not a bad man, I readily agree; but, barring improbable changes, he will die as a terrible eccentric.

He was a professor at the Johannaum, and taught a mineralogy course during which he regularly flew into a rage once or twice. Not that he cared about having students who regularly attended his lectures, nor about the degree of attention they paid him, nor about the success they might later achieve; these details hardly worried him. He taught "subjectively," to use a phrase from German philosophy, for himself and not for others. He was a selfish scholar, a wellspring of knowledge whose pulley creaked whenever one tried to draw anything from it. In short, a miser.

There are a few professors of this kind in Germany.

My uncle, unfortunately, did not possess exceptionally good pronunciation, if not in private, then certainly not when speaking in public, and this is a regrettable flaw in an orator. Indeed, during his lectures at the Johannaum, the professor often stopped short; he struggled with a recalcitrant word that refused to slip from his lips, one of those words that resist, swell, and finally burst forth in the unscientific form of a curse. Hence, great anger.

In mineralogy, there are many names that are semi-Greek, semi-Latin, difficult to pronounce, those harsh appellations that would grate on the lips of a poet. I don't mean to speak ill of this science. Far from it. But when one is faced with rhombohedral crystallizations, retinasphaltic resins, gelenites, tangasites, lead molybdates, manganese tungstates, and zirconia titanates, even the most skillful tongue is allowed to stumble.

Now, in the town, people knew about my uncle's forgivable infirmity, and they took advantage of it, waiting for him at dangerous crossings, which would send him into a rage, and they would laugh, which is in very poor taste, even for Germans. So, if there was always a large crowd attending Lidenbrock's lectures, how many followed them assiduously, coming mainly to be amused by the professor's magnificent tempers!

In any case, my uncle, I cannot stress enough how much he was a true scholar. Although he sometimes broke his samples by testing them too roughly, he combined the genius of a geologist with the eye of a mineralogist. With his hammer, his steel point, his magnetic needle, his blowpipe, and his bottle of nitric acid, he was a very strong man. By the fracture, the appearance, the hardness, the fusibility, the sound, the smell, the taste of any mineral, he could classify it without hesitation among the six hundred species that science recognizes today.

Thus, Lidenbrock's name resounded with honor in gymnasiums and national associations. Messrs. Humphry Davy, von Humboldt, and Captains Franklin and Sabine made sure to visit him whenever they passed through Hamburg. Messrs. Becquerel, Ebelmen, Brewster, Dumas, and Milne-Edwards enjoyed consulting him on the most exciting questions of chemistry. This science owed him some rather remarkable discoveries, and in 1853, a *Treatise on Transcendental Crystallography* by Professor Otto Lidenbrock, a large folio volume with plates, was published in Leipzig, though it failed to recoup its costs.

Add to that the fact that my uncle was curator of the mineralogical museum of Mr. Struve, the Russian ambassador, a precious collection of European renown.

So this was the man who had so eagerly intrigued me. Picture him: tall, thin, with the constitution of an ox, and youthful blond hair that made him look at least ten years younger than his fifty years. His large eyes constantly rolled behind enormous spectacles; his long, thin nose resembled a sharp blade; malicious people even claimed he was magnetized and attracted iron filings. Pure slander; he only attracted tobacco, but in great abundance, to be honest.

When I add that my uncle took mathematical strides of half a fathom, and if I say that when walking he held his fists tightly closed, a sign of an impetuous temperament, people will know him well enough not to be fond of his company.

He lived in his small house on Königstrasse, a house half wood, half brick, with a serrated gable; it overlooked one of those winding canals that cross in the middle of the oldest part of Hamburg, which the fire of 1842 fortunately spared.

The old house leaned a little, it was true, and showed its belly to passers-by; it carried its sloping roof on one side, like the cap of a student of the Tugendbund; the plumb of its lines left something to be desired; but, on the whole, it stood well, thanks to an old elm vigorously embedded in the facade, which in the spring pushed its flowering buds through the stained glass of the windows.

My uncle was remarkably wealthy for a German professor. The house belonged to him entirely, both the structure and its contents. The contents consisted of his goddaughter Graüben, a seventeen-year-old girl from Virginia, the maid Martha, and myself. As both nephew and orphan, I became his assistant in his experiments.

I will admit that I took a keen interest in geological sciences; I had the blood of a mineralogist in my veins, and I was never bored in the company of my precious pebbles.

In short, one could live happily in that little house on Königstrasse, despite the impatience of its owner, for, although he went about it in a somewhat brutal manner, he loved me no less. But that man didn't know how to wait, and he was always in more of a hurry than anyone could imagine.

When, in April, he had planted mignonette or morning glories in the earthenware pots of his living room, every morning he would regularly go and pull them by the leaves in order to hasten their growth.

With such an eccentric character, there was no choice but to obey. So I rushed to his office.

II

This cabinet was a veritable museum. All the specimens of the mineral kingdom were there, labeled in the most perfect order, following the three major divisions of flammable, metallic, and lithoid minerals.

How well I knew them, those trinkets of mineralogical science! How many times, instead of playing with boys my own age, I had delighted in dusting off those graphites, those anthracites, those coals, those lignites, those peats! And the bitumens, the resins, the organic salts that had to be preserved from the slightest atom of dust! And those metals, from iron to gold, whose relative value vanished before the absolute equality of the scientific specimens! And all those stones that would have been enough to rebuild the house on Königstrasse, even with one more beautiful room, which I would have managed so well!

But, upon entering the study, I scarcely gave thought to these marvels. My uncle alone occupied my thoughts. He was sunk deep in his large armchair upholstered in Utrecht velvet, and held in his hands a book which he regarded with the deepest admiration.

"What a book! What a book!" he exclaimed.

This exclamation reminded me that Professor Lidenbrock was also a bibliomaniac in his spare time; but a book only had value in his eyes if it was unavailable, or at least unreadable.

"Well!" he said to me, "don't you see? But it's a priceless treasure that I found this morning while browsing in the shop of the Jew Hevelius.

"Magnificent!" I replied with manufactured enthusiasm.

Indeed, what was the point of all this fuss over an old quarto volume whose spine and covers seemed to be made of coarse calfskin, a yellowish book with a faded bookmark hanging from it?

However, the professor's admiring interjections did not cease.

"Look," he said, asking himself questions and answers, "is it beautiful enough? Yes, it's admirable! And what a binding! Does this book open easily? Yes, for it stays open to any page! But does it close properly? Yes, for the cover and the pages form a perfectly smooth whole, without separating or gaping anywhere. And that spine, which doesn't show a single break after seven hundred years! Ah! Now that's a binding of which Bozerian, Closs, or Purgold would have been proud!"

As he spoke, my uncle repeatedly opened and closed the old book. I couldn't help but ask him about its contents, although I had absolutely no interest in them.

"And what is the title of this wonderful volume?" I asked with an eagerness too enthusiastic not to be feigned.

"This work!" replied my uncle, becoming animated, "is the *Heims-Kringla* by Snorre Turleson, the famous Icelandic author of the twelfth century; it is the Chronicle of the Norwegian princes who reigned in Iceland."

—Really! I exclaimed at the best of my ability, and, no doubt, this is a translation into German?

"Fine!" retorted the professor sharply, "a translation! And what would I do with your translation! Who cares about your translation! This is the original work in Icelandic, that magnificent language, rich and simple at the same time, which allows for the most varied grammatical combinations and numerous word modifications!"

—Like German, I insinuated with some success.

"Yes," replied my uncle, shrugging his shoulders; "but with this difference: the Icelandic language admits three genders like Greek and declines proper nouns like Latin!"

—Ah! I said, a little shaken in my indifference, and are the characters in this book beautiful?

—Characters! Who's talking about characters, you poor Axel! These are indeed characters! Ah! You take this for a printed document! But, you ignorant fool, it's a manuscript, and a runic manuscript at that!...

-Runic?

—Yes! Are you going to ask me to explain this word to you now?

"I'll be sure not to," I replied, with the tone of a man whose pride had been wounded.

But my uncle continued even more enthusiastically, and taught me, against my will, things that I had little desire to know.

"The runes," he continued, "were writing characters formerly used in Iceland, and, according to tradition, they were invented by Odin himself! But look, admire, you impious one, at these types that sprang from the imagination of a god!"

Indeed, for want of a reply, I was about to prostrate myself, the kind of answer which must please gods as well as kings, for it has the advantage of never embarrassing them, when an incident came to divert the course of the conversation.

It was the appearance of a filthy parchment that slipped out of the book and fell to the ground.

My uncle pounced on this trinket with an understandable eagerness. An old document, perhaps locked away since time immemorial in an old book, could not fail to have great value in his eyes.

"What is this?" he exclaimed.

And, at the same time, he carefully unfurled on his table a piece of parchment five inches long and three inches wide, on which ran, in transverse lines, characters from a grimoire.

Here is the exact facsimile. I wish to make these bizarre symbols known, for they led Professor Lidenbrock and his nephew to undertake the strangest expedition of the nineteenth century:

Ж.АКІІІ*†*А†Н†І*††РІД
†*Ў†**УРІІ††І†РІІДАР†Р
†,*1УІІ†А††*_*1ІДААІ
†У†ІІ†ІІІІ†††АІІ*1
1†ІІІА.І*РАРІ†ІІ
*РРДАУІ††ІІІІРАІІІІ
†,ІІРІ*†ІІІ_Р_ІІІ_

The professor considered this series of characters for a few moments; then he said, raising his glasses:

"It's runic; these types are absolutely identical to those in Snorre Turleson's manuscript! But... what could this mean?"

Since runic script seemed to me to be an invention of scholars to mystify the poor, I wasn't displeased to see that my uncle understood nothing of it. At least, that's what it seemed to me from the movement of his fingers, which began to fidget terribly.

"But that's old Icelandic!" he muttered through his teeth.

And Professor Lidenbrock must have known a lot about it, because he was considered a true polyglot. Not that he spoke fluently all two thousand languages and four thousand idioms used on the face of the earth, but he certainly knew a good number of them.

He was therefore, in the face of this difficulty, going to give free rein to all the impetuosity of his character, and I foresaw a violent scene, when two o'clock struck on the small clock by the fireplace.

Immediately, good Martha opened the door of the study, saying:

"The soup is served."

"To hell with the soup," cried my uncle, "and the one who made it, and those who will eat it!"

Martha fled; I flew after her, and, without knowing how, I found myself sitting in my usual place in the dining room.

I waited a few moments. The professor did not come. It was the first time, to my knowledge, that he had missed the solemnity of the dinner. And what a dinner it was! Parsley soup, a ham omelet seasoned with nutmeg and sorrel, a veal loin with plum compote, and, for dessert, shrimp with sugar, all washed down with a lovely Moselle wine.

That's what an old piece of paper was going to cost my uncle. Honestly, as a devoted nephew, I felt obliged to eat for him, and even for myself. Which I did in good conscience.

"I've never seen anything like it!" said good Martha as she served. "Mr. Lidenbrock isn't even at the table!"

—That's unbelievable.

"This foreshadows some serious event!" the old servant girl continued, nodding her head.

In my opinion, this foreshadowed nothing but a terrible scene when my uncle found his dinner devoured.

I was on my last shrimp when a booming voice snatched me away from the pleasures of dessert. I jumped from the dining room to the study.

III

"It's obviously runic," the professor said, frowning. "But there's a secret, and I'll find out what it is, otherwise..."

A violent gesture ended his thought.

"Sit there," he added, pointing to the table with his fist, "and write."

In an instant I was ready.

"Now, I'm going to dictate to you each letter of our alphabet that corresponds to one of these Icelandic characters. We'll see what happens. But, by Saint Michael! Be careful not to make a mistake!"

The dictation began. I applied myself as best I could; each letter was called out one after the other, forming the incomprehensible sequence of the following words:

mm. rnllsesreulseec J desgtssmfunteiefniedr kekt ,
samnatrate SS aodrrnemtnae I nuaectrril S a A tuaar .
nsrcieaabsccdrmieeut ulfrantudt , iacoseibo K edii Y

When this work was finished, my uncle quickly took the sheet of paper on which I had just written, and he examined it carefully for a long time.

"What does that mean?" he repeated mechanically.

On my honor, I couldn't have taught him that. Besides, he didn't question me about it, and he continued talking to himself:

"That's what we call a cryptogram," he said, "in which the meaning is hidden under deliberately scrambled letters, which, properly arranged, would form an intelligible sentence! When I think that this might hold the explanation or the indication of a great discovery!"

For my part, I thought there was absolutely nothing there, but I prudently kept my opinion to myself.

The professor then took the book and the parchment, and compared them both.

"These two writings are not in the same hand," he said; "the cryptogram is later than the book, and I see irrefutable proof of this. Indeed, the first letter is a double M, which one would search for in vain in Turleson's book, for it was not added to the Icelandic alphabet until the fourteenth century. Thus, there are at least two hundred years between the manuscript and the document."

I agree, that seemed quite logical to me.

"I am therefore led to believe," my uncle continued, "that one of the owners of this book must have written these mysterious characters. But who on earth was this owner? Wouldn't he have put his name somewhere in this manuscript?"

My uncle raised his glasses, took a strong magnifying glass, and carefully examined the first few pages of the book. On the back of the second page, the one with the half-title, he discovered a kind of blot, which looked like an ink stain. However, upon closer inspection, one could make out a few half-erased characters. My uncle understood that this was the important part; he therefore focused intently on the blot and, with the help of his large magnifying glass, finally recognized the following signs, runic characters which he read without hesitation:

1 ʁ ʁ † * 1 ʁ ʁ ʁ * * † ʁ

"Arne Saknussem!" he exclaimed triumphantly, "but that's a name, and an Icelandic name at that! The name of a sixteenth-century scholar, a famous alchemist!"

I looked at my uncle with a certain admiration.

"These alchemists," he continued, "Avicenna, Bacon, Lull, Paracelsus, were the true, the only scholars of their time. They made discoveries that we have the right to be astonished by. Why shouldn't this

Saknussemm have buried some surprising invention beneath this incomprehensible cryptogram? It must be so. It is."

The professor's imagination was ignited by this hypothesis.

"No doubt," I dared to reply, "but what interest could this scholar have in hiding some marvelous discovery like this?"

—Why? Why? Well! How do I know? Didn't Galileo do the same for Saturn? Besides, we shall see; I will have the secret of this document, and I will neither eat nor sleep until I have guessed it.

—Oh! I thought.

"Neither you, Axel," he continued.

—Good heavens! I said to myself, it's lucky I had dinner for two!

"And first," said my uncle, "we must find the language of this 'cipher.' That shouldn't be difficult."

At these words, I quickly raised my head. My uncle resumed his soliloquy:

"Nothing could be easier. This document contains one hundred and thirty-two letters, yielding seventy-nine consonants against fifty-three vowels. Now, words in southern languages are formed in roughly this proportion, while northern languages are infinitely richer in consonants. It is therefore a southern language."

These conclusions were quite accurate.

"But what language is this?"

That's where I was waiting for my scholar, in whom, however, I discovered a profound analyst.

"This Saknussemm," he continued, "was an educated man; now, whenever he did not write in his native language, he should have chosen preferably the common language among the cultivated minds of the sixteenth century, I mean Latin. If I am mistaken, I can try Spanish, French, Italian, Greek, Hebrew. But the scholars of the sixteenth century

generally wrote in Latin. I therefore have the right to say *a priori* : this is Latin."

I jumped up in my chair. My memories of studying Latin rebelled against the pretension that this string of baroque words could belong to the sweet language of Virgil.

"Yes! Latin," my uncle replied, "but garbled Latin."

"Good!" I thought. "If you sort it out, you'll be clever, uncle."

"Let's examine this closely," he said, picking up the sheet of paper on which I had written. "Here is a series of one hundred and thirty-two letters, seemingly in disorder. There are words where only consonants appear, like the first, 'mrnlls,' and others where vowels, on the contrary, abound, the fifth, for example, 'unteief,' or the penultimate, 'oseibo.' Now, this arrangement was obviously not a combination; it is given *mathematically* by the unknown pattern that governed the succession of these letters. It seems certain to me that the original sentence was written regularly, then reversed according to a law that must be discovered. Whoever possessed the key to this 'cipher' would read it fluently. But what is this key? Axel, do you have this key?"

To this question I gave no answer, and for good reason. My gaze had fallen upon a charming portrait hanging on the wall, the portrait of Graüben. My uncle's ward was then in Altona, staying with a relative, and her absence made me very sad, for, I can confess now, the pretty Virlandaise and the professor's nephew loved each other with all the patience and tranquility typical of Germany; we had become engaged without my uncle's knowledge, he being too much of a geologist to understand such feelings. Graüben was a charming young blonde girl with blue eyes, of a somewhat serious disposition and a rather earnest mind; but she loved me no less for it; for my part, I adored her, if indeed such a verb exists in the Germanic language! The image of my little Virlandaise thus transported me, in an instant, from the world of reality into that of dreams, into that of memories.

I saw again the faithful companion of my work and my pleasures. She helped me each day to organize my uncle's precious stones; she labeled them with me. Mademoiselle Graüben was a very skilled mineralogist!

She loved to delve into the difficult questions of science. How many sweet hours we spent studying together, and how often I envied the fate of those insensitive stones that she handled with her charming hands.

Then, when the time came for recreation, we both went out; we took the overgrown paths of the Alsser, and together we went to the old tarred mill which looks so good at the end of the lake; along the way, we chatted while holding hands; I told her things which made her laugh as best she could; we thus arrived at the edge of the Elbe, and, after saying goodnight to the swans which swim among the large white water lilies, we returned to the quay by steamboat.

But I was at that point in my dream when my uncle, slamming his fist on the table, violently brought me back to reality.

"Let's see," he said, "the first idea that should come to mind to scramble the letters of a sentence is, it seems to me, to write the words vertically instead of tracing them horizontally.

—Well! I thought.

"We need to see what happens, Axel. Write down any sentence on this piece of paper; but instead of arranging the letters one after the other, put them successively in vertical columns, so as to group them in fives or sixes."

I understood what it was about, and immediately I wrote from top to bottom:

J mne, bee, t G e t' bmirnaiata! iepe ü

"Okay," said the professor, without having read. "Now, arrange these words on a horizontal line."

I obeyed, and I obtained the following sentence:

Jmne,b ee,tGe t'bmirn aiata! iepeü

"Perfect!" said my uncle, snatching the paper from my hands, "this already has the appearance of the old document; the vowels are grouped together as well as the consonants in the same disorder; there

are even capital letters in the middle of words, as well as commas, just like in the Saknussem parchment!"

I cannot help but find these remarks very ingenious.

"Now," my uncle continued, addressing me directly, "to read the sentence you just wrote, which I don't know, I will simply have to take successively the first letter of each word, then the second, then the third, and so on.

And my uncle, to his great astonishment, and especially to mine, read:

I like you, my little Graüben !

"Huh!" said the professor.

Yes, without realizing it, like a clumsy lover, I had written that compromising sentence!

"Ah! You like Graüben!" my uncle replied in a truly guardianly tone!

—Yes... No... I stammered!

"Ah! You like Graüben," he replied mechanically. "Well then, let's apply my method to the document in question!"

My uncle, lost in his absorbed contemplation, had already forgotten my imprudent words. I say imprudent, for the scholar's mind could not comprehend matters of the heart. But, fortunately, the important matter of the document prevailed.

As he was about to perform his crucial experiment, Professor Lidenbrock's eyes flashed through his spectacles; his fingers trembled as he picked up the old parchment; he was deeply moved. Finally, he coughed loudly, and in a deep voice, calling out the first letter, then the second of each word, he dictated the following series to me:

*mmessunkaSenrA.icefdoK.segnittamurtn
ecertserrette,rotaivsadua,ednecsedsadne
lacartniiilUjsiratracSarbmutabledmek meretarcsilucoYsleffenSnI*

In finishing, I must confess, I was emotional; these letters, named one by one, had presented no meaning to my mind; I was therefore waiting for the professor to let a sentence of magnificent Latinity unfold pompously between his lips.

But who could have foreseen it! A violent blow shook the table. Ink splattered, the pen flew from my hands.

"That's not it!" cried my uncle, "that doesn't make any sense!"

Then, crossing the office like a cannonball, descending the stairs like an avalanche, he rushed into Königstrasse, and fled at full speed.

IV

"He's gone?" cried Martha, running to the sound of the street door slamming shut, which had just shaken the whole house.

—Yes! I replied, completely out of it!

"Well? And her dinner?" said the old servant.

—He will not have dinner!

—And his supper?

—He will not have supper!

"What?" said Martha, clasping her hands together.

—No, good Martha, he won't eat anymore, nor anyone else in the house! My uncle Lidenbrock is putting us all on a diet until he deciphers an old grimoire that is absolutely undecipherable!

"Jesus! So we have no choice but to starve to death!"

I dared not admit that with a man as absolute as my uncle, it was an inevitable fate.

The old servant, seriously alarmed, returned to her kitchen moaning.

When I was alone, the idea came to me to go and tell Graüben everything; but how could I leave the house? What if he called me? What if he wanted to start again this logogriphical work, which had been vainly proposed to old Oedipus! And if I did not answer his call, what would happen?

The wisest course of action was to stay. As it happened, a mineralogist from Besançon had just sent us a collection of siliceous geodes that needed to be classified. I set to work. I sorted, labeled, and arranged all

these hollow stones, inside which tiny crystals stirred, in their display case.

But this occupation did not absorb me; the matter of the old document continued to preoccupy me strangely. My head was churning, and I felt a vague unease. I had a premonition of impending catastrophe.

After an hour, my geodes were neatly stacked. I then relaxed in the large Utrecht armchair, arms hanging loosely and head thrown back. I lit my long, curved pipe, its carved bowl depicting a languidly reclining naiad; then I amused myself by watching the carbonization process, which gradually transformed my naiad into a fully realized Black woman. From time to time, I listened to see if any footsteps echoed on the stairs. But no. Where could my uncle be at that moment? I pictured him running beneath the beautiful trees along the Altona road, gesticulating wildly, pulling at the wall with his cane, beating the grass with a violent arm, decapitating thistles, and disturbing the solitary storks in their rest.

Would he return triumphant or discouraged? Who would prevail, the secret or him? I wondered this, and, mechanically, I took between my fingers the sheet of paper on which lay the incomprehensible series of letters I had traced. I repeated to myself:

"What does that mean?"

I tried to group these letters to form words. Impossible. Whether I combined them in twos, threes, fives, or sixties, it produced absolutely nothing intelligible; the fourteenth, fifteenth, and sixteenth letters did form the English word "ice," and the eighty-fourth, eighty-fifth, and eighty-sixth formed the word "sir." Finally, in the body of the document, on the second and third lines, I also noticed the Latin words "rota," "mutabile," "ira," "neo," and "atra."

"Good heavens," I thought, "these last words would seem to prove my uncle right about the language of the document! And even, on the fourth line, I can still see the word 'luco,' which translates as 'sacred grove.' It is true that on the third line, one reads the word 'tabiled,'

which is perfectly Hebrew in form, and on the last, the words 'mer,' 'arc,' 'mère,' which are purely French."

It was enough to drive you mad! Four different languages in that absurd sentence! What possible connection could there be between the words "ice, sir, anger, cruel, sacred wood, changing, mother, bow, or sea?" Only the first and last were easily related; no wonder that a document written in Iceland referred to a "sea of ice." But understanding the rest of the cryptogram was another matter entirely.

I was therefore struggling against an insoluble difficulty; my brain was heating up; my eyes were blinking on the sheet of paper; the one hundred and thirty-two letters seemed to flutter around me, like those silver tears that slide in the air around our head, when the blood has violently rushed there.

I was in the grip of a kind of hallucination; I was suffocating; I needed air. Mechanically, I fanned myself with the sheet of paper, the back and front of which successively presented themselves to my gaze.

How surprised I was when, in one of these rapid turns, at the moment when the back turned towards me, I thought I saw perfectly legible words appear, Latin words, among others "craterem" and "terrestre".

Suddenly a light flashed in my mind; these clues alone allowed me to glimpse the truth; I had discovered the law of ciphers. To read this document, it wasn't even necessary to read it through the flipped sheet! No. As it was, as it had been dictated to me, as it could be spelled fluently. All the professor's ingenious combinations were coming true; he had been right about the arrangement of the letters, right about the language of the document! He missed being able to read this Latin sentence from beginning to end by a hair's breadth, and that hair's breadth, chance had just bestowed upon me!

You can understand why I was so moved! My eyes blurred. I couldn't use it. I had spread the sheet of paper on the table. All I had to do was glance at it to become the possessor of the secret.

Finally I managed to calm my agitation. I forced myself to walk around the room twice to soothe my nerves, and I went back and sank

into the large armchair.

"Let's read," I exclaimed, after having replenished my lungs with a full supply of air.

I leaned over the table; I placed my finger successively on each letter, and, without stopping, without hesitating, for a moment, I pronounced the entire sentence aloud.

But what astonishment, what terror seized me! I stood at first as if struck by a sudden blow. What! What I had just learned had come true! A man had been audacious enough to break in! ...

"Ah!" I cried, jumping up: "No! No! My uncle won't know! The last thing I need is for him to experience such a journey! He'd want to go too! Nothing could stop him! A geologist so determined! He'd go anyway, despite everything, in spite of everything! And he'd take me with him, and we'd never come back! Never! Never!"

I was in a state of overexcitement that made it difficult to paint.

"No! No! It will not be," I said emphatically, "and since I can prevent such an idea from entering my tyrant's mind, I will. By turning this document over and over, he might by chance discover the key! Let us destroy it."

There was still a ember in the fireplace. I grabbed not only the sheet of paper, but also Saknussem's parchment; with a feverish hand I was about to throw everything onto the coals and destroy this dangerous secret, when the door to the study opened. My uncle appeared.

V

I only had time to put the unfortunate document back on the table.

Professor Lidenbrock appeared deeply absorbed. His dominant thought left him no respite; he had evidently scrutinized and analyzed the matter, employed all the resources of his imagination during his walk, and was now returning to apply some new combination.

Indeed, he sat down in his armchair, and, pen in hand, he began to establish formulas that resembled an algebraic calculation.

I followed his trembling hand with my eyes; I didn't miss a single one of his movements. Was some unexpected result about to occur? I trembled, and for no reason, since the true combination, the "only" one, had already been found, making any further search inevitably futile.

For three long hours, my uncle worked without speaking, without raising his head, erasing, reworking, crossing out, starting over a thousand times.

I knew perfectly well that if he managed to arrange the letters according to all the relative positions they could occupy, the sentence would be complete. But I also knew that only twenty letters can form two quintillion, four hundred and thirty-two quadrillions, nine hundred and two trillion, eight billion, one hundred and seventy-six million, six hundred and forty thousand combinations. Now, there were one hundred and thirty-two letters in the sentence, and these one hundred and thirty-two letters yielded a number of different sentences composed of at least one hundred and thirty-three digits, a number almost impossible to enumerate and beyond all estimation.

I was reassured by this heroic way of solving the problem.

However, time passed; night fell; the noises of the street subsided; my uncle, still bent over his task, saw nothing, not even good Martha who

half-opened the door; he heard nothing, not even the voice of that worthy servant, saying:

"Will the gentleman be having dinner tonight?"

So Martha had to leave without an answer: as for me, after resisting for some time, I was overcome by an invincible sleep, and I fell asleep on one end of the sofa, while my uncle Lidenbrock was still calculating and crossing things out.

When I woke up the next day, the tireless digger was still at work. His red eyes, his pale complexion, his hair tangled under his feverish hand, his flushed cheekbones clearly indicated his terrible struggle with the impossible, and, in what mental fatigue, in what strain of the brain, the hours must have passed for him.

Truly, I felt sorry for him. Despite the reproaches I felt I had a right to make, a certain emotion was overcoming me. The poor man was so possessed by his idea that he forgot to get angry; all his vital energies were concentrated on a single point, and, as they did not escape through their usual outlet, one could fear that their tension might cause him to explode at any moment.

I could have loosened the iron grip on his skull with a single gesture, with just a word! And I did nothing of the sort.

However, I had a good heart. Why did I remain silent in such a circumstance? For my uncle's own good.

"No, no," I repeated, "no, I won't speak! He wants to go, I know him; nothing can stop him. He has a volcanic imagination, and to do what other geologists haven't done, he would risk his life. I will remain silent; I will keep this secret that chance has bestowed upon me; to reveal it would be to kill Professor Lidenbrock. Let him guess it, if he can; I don't want to reproach myself one day for having led him to his downfall."

Having resolved this, I folded my arms and waited. But I had not counted on an incident that occurred a few hours later.

When good Martha wanted to leave the house to go to the market, she found the door closed; the large key was missing from the lock.

Who had taken it off? My uncle, obviously, when he returned the day before after his hasty excursion.

Was it intentional? Was it an accident? Did he want to subject us to the rigors of starvation? That seemed a bit much to me. What! Martha and I, victims of a situation that had absolutely nothing to do with us? Undoubtedly, and I remembered a precedent that should have frightened us. Indeed, a few years earlier, when my uncle was working on his great mineralogical classification, he went forty-eight hours without eating, and his entire household had to conform to this scientific diet. As for me, I ended up with stomach cramps that were hardly pleasant for a boy of rather voracious nature.

But it seemed to me that lunch would be lacking, just like supper the night before. However, I resolved to be heroic and not give in to the demands of hunger. Martha took this very seriously and was quite distressed, the good woman. As for me, the impossibility of leaving the house worried me even more, and with good reason. You can understand me perfectly.

My uncle was always working; his imagination was lost in the ideal world of combinations; he lived far from the earth, and truly outside of earthly needs.

Around noon, hunger seriously gnawed at me; Martha, quite innocently, had devoured the pantry provisions the day before; there was nothing left in the house. However, I held firm. I made it a point of honor.

Two o'clock struck. It was becoming ridiculous, intolerable even; my eyes were wide with shock. I began to tell myself that I was exaggerating the importance of the document; that my uncle would not believe it; that he would see it as a simple hoax; that at worst he would be detained against his will if he wanted to try the adventure; that finally he could discover the key to the "cipher" himself, and that I would then be left with nothing but the cost of my abstinence.

These reasons, which I had rejected with indignation the day before, seemed excellent to me; I even found it perfectly absurd to have waited so long, and I decided to tell everything.

So I was looking for a way to start the conversation, not too abruptly, when the professor stood up, put on his hat and prepared to leave.

What, leave the house, and lock ourselves up again! Never.

"My uncle!" I said.

He didn't seem to hear me.

"My uncle Lidenbrock!" I repeated, raising my voice.

"Huh?" he said, like a man who had suddenly woken up.

—Well! This key?

—Which key? The key to the door?

"But no," I cried, "the key to the document!"

The professor looked at me over his glasses; he must have noticed something unusual about my expression, for he quickly seized my arm and, unable to speak, questioned me with his eyes. Yet never was a question formulated more clearly.

I shook my head up and down.

He shook his own head with a sort of pity, as if he were dealing with a madman.

I made a more assertive gesture.

His eyes shone brightly; his hand became threatening.

This silent conversation, under these circumstances, would have interested even the most indifferent spectator. And truly, I almost didn't dare speak, so afraid was I that my uncle would smother me in the first embraces of his joy. But he became so insistent that I had to reply.

"Yes, that key!... chance!..."

"What are you saying?" he exclaimed with indescribable emotion.

—Here, I said, handing him the sheet of paper on which I had written, read.

"But that means nothing!" he replied, crumpling the sheet of paper.

"Nothing, if you start reading from the beginning, but from the end..."

I hadn't finished my sentence when the professor let out a cry, better than a cry, a veritable roar! A revelation had just occurred in his mind. He was transfigured.

"Ah! Ingenious Saknussem!" he exclaimed, "So you wrote your sentence backwards at first!"

And rushing to the sheet of paper, his eyes blurred, his voice trembling, he read the entire document, going back from the last letter to the first.

It was designed in these terms:

In Sneffels Yoculis craterem kem delibat umbra Scartaris Julii intra calendas descende, audas viator, et terrestrial centrum attinges. Kod feci. Arne Saknussem .

Which, from this poor Latin, can be translated as follows:

Descend into the crater of Snæfells' Yocul, which the shadow of Scartaris caresses before the calends of July, bold traveler, and you will reach the center of the Earth. Which I did. Arne Saknussem

My uncle, upon reading this, leaped up as if he had unexpectedly touched a Leyden jar. He was magnificent in his audacity, joy, and conviction. He paced back and forth; he held his head in his hands; he moved the chairs; he stacked his books; he juggled, unbelievably, his precious geodes; he threw a punch here, a slap there. Finally, his nerves calmed, and, like a man exhausted by excessive expenditure of fluid, he fell back into his armchair.

"What time is it?" he asked after a few moments of silence.

"Three hours," I replied.

—Well! My dinner went by so fast. I'm starving. Let's eat.
And then...

-Afterwards?

—You will pack my suitcase.

"Huh!" I exclaimed.

"And yours!" replied the ruthless professor as he entered the dining room.

VI

At these words, a shiver ran through my entire body. However, I restrained myself. I even resolved to put on a brave face. Only scientific arguments could stop Professor Lidenbrock; and there were some, and good ones at that, against the possibility of such a journey. To go to the center of the earth! What madness! I reserved my rhetoric for the opportune moment and attended to the meal.

There's no need to recount my uncle's curses at the cleared table. Everything became clear. Good Martha was freed. She rushed to the market and did so well that an hour later my hunger was satisfied, and I regained my sense of the situation.

During the meal, my uncle was almost cheerful; he let slip those scholarly jokes that are never truly dangerous. After dessert, he beckoned me to follow him into his study.

I obeyed. He sat at one end of his work table, and I at the other.

"Axel," he said in a rather gentle voice, "you are a very ingenious boy; you did me a great service there, when, weary of the struggle, I was about to abandon this scheme. Where would I have gone astray? No one can know! I will never forget this, my boy, and you will have your share of the glory we are about to acquire."

"Come on!" I thought, "he's in a good mood; the time has come to discuss this glory."

"First of all," my uncle continued, "I urge you to keep the utmost secrecy, do you understand? I have no shortage of envious people in the world of scholars, and many would like to undertake this journey, who will only suspect it upon our return."

—Do you believe, I said, that the number of these bold men was so great?

—Indeed! Who would hesitate to achieve such renown? If this document were known, an entire army of geologists would rush to follow in Arne Saknussem's footsteps!

—That is what I am not convinced of, my uncle, because nothing proves the authenticity of this document.

—What! And the book in which we discovered it!

"Well! I grant that this Saknussem wrote these lines, but does it follow that he actually undertook this journey, and could this old parchment not contain a hoax?"

I almost regretted uttering that last word, a bit of a risk; the professor frowned, and I feared I had jeopardized the rest of the conversation. Fortunately, that wasn't the case. My stern interlocutor broke into a sort of smile and replied:

"We'll see."

—Ah! I said, a little annoyed; but allow me to exhaust the series of objections relating to this document.

"Go ahead and speak, my boy, don't hold back. I'll give you complete freedom to express your opinion. You're no longer my nephew, but my colleague. So be it."

—Well, I'll start by asking you what this Yocul, Sneffels and Scartaris are, which I've never heard of?

"Nothing could be easier. I just received a postcard from my friend Peterman in Leipzig some time ago; it couldn't have arrived at a more opportune moment. Take the third atlas from the second bay of the main library, series Z, plate 4."

I got up, and, thanks to these precise directions, I quickly found the atlas I had requested. My uncle opened it and said:

"Here is one of the best maps of Iceland, the Handerson map, and I believe it will give us the solution to all your difficulties."

I leaned over the map.

"Look at this island made up of volcanoes," said the professor, "and notice that they all bear the name Yocul. This word means 'glacier' in Icelandic, and, at Iceland's high latitude, most eruptions occur through the layers of ice. Hence the name Yocul applied to all the igneous mountains on the island."

"Well," I replied, "but what is Sneffels?"

I hoped there would be no response to this request. I was wrong. My uncle continued:

"Follow me to the west coast of Iceland. Can you see Reykjavik, its capital? Yes. Good. Travel up the countless fjords of these sea-eroded shores, and stop a little below the sixty-fifth parallel. What do you see there?"

—A sort of peninsula resembling a bare bone, ending in an enormous kneecap.

—The comparison is apt, my boy; now, do you see nothing on that kneecap?

—Yes, a mountain that seems to have grown in the sea.

—Okay! It's the Sneffels.

—The Sneffels?

—Itself a five thousand foot high mountain, one of the most remarkable on the island, and certainly the most famous in the whole world, if its crater reaches the center of the globe.

"But that's impossible!" I exclaimed, shrugging my shoulders and revolted by such a supposition.

"Impossible!" replied Professor Lidenbrock sternly. "And why is that?"

—Because this crater is obviously blocked by lava, by burning rocks, and so...

—What if it's an extinct crater?

-Extinct?

“Yes. The number of active volcanoes on the Earth’s surface is currently only about three hundred; but there are a much larger number of extinct volcanoes. Snæfells is among the latter, and since recorded times, it has had only one eruption, that of 1219; since then, its activity has gradually subsided, and it is no longer considered an active volcano.”

To these positive statements I had absolutely nothing to reply; I therefore focused on the other obscurities contained in the document.

"What does this word Scartaris mean," I asked, "and what are the Kalends of July doing here?"

My uncle took a few moments to reflect. I had a fleeting moment of hope, but only a moment, for soon he replied to me in these terms:

“What you call darkness is light to me. This proves the ingenious care with which Saknussemme sought to clarify his discovery. Snæfells is formed of several craters; it was therefore necessary to indicate which one leads to the center of the globe. What did the Icelandic scholar do? He noticed that around the Kalends of July, that is to say, towards the last days of June, one of the mountain's peaks, Scartaris, cast its shadow as far as the opening of the crater in question, and he recorded this fact in his document. Could he have imagined a more precise indication, and once we reach the summit of Snæfells, will we have any doubt about which path to take?”

My uncle certainly had an answer for everything. I could see that he was unassailable regarding the words on the old parchment. I therefore stopped pressing him on this point, and, since I had to convince him first and foremost, I moved on to the scientific objections, which, in my opinion, were far more serious.

“Come now,” I said, “I am forced to admit it, Saknussemme’s statement is clear and cannot leave any doubt in the mind. I even grant that the document has an air of perfect authenticity. This scholar went to the

bottom of Snæfells; he saw the shadow of Scartaris caress the rim of the crater before the Kalends of July; he even heard it recounted in the legendary tales of his time that this crater led to the center of the earth; but as for having reached it himself, as for having made the journey and returned, if he undertook it, no, a hundred times no!"

"And the reason?" said my uncle in a singularly mocking tone.

—That's because all the theories of science demonstrate that such an undertaking is impractical!

"Do all the theories say that?" replied the professor, adopting a good-natured tone. "Ah! Those nasty theories! How they'll bother us, those poor theories!"

I saw that he was making fun of me, but I continued nonetheless.

"Yes! It is perfectly well established that heat increases by about one degree for every seventy feet of depth below the Earth's surface; now, assuming this constant proportionality, and given that the Earth's radius is fifteen hundred leagues, there exists at its center a temperature of two million degrees. The materials within the Earth are therefore in a state of incandescent gas, for metals, gold, platinum, and even the hardest rocks cannot withstand such heat. I therefore have the right to ask if it is possible to penetrate such an environment!"

—So, Axel, it's the heat that's bothering you?

—Undoubtedly. If we reached a depth of only ten leagues, we would have reached the limit of the Earth's crust, for already the temperature is above thirteen hundred degrees.

—And you're afraid of melting?

"I'll leave that question to you," I replied irritably.

"Here is what I have decided," replied Professor Lidenbrock, assuming his lofty airs; "neither you nor anyone else knows for certain what happens inside the Earth, since we barely know one twelve-thousandth of its radius; science is eminently imperfectible, and every theory is constantly refuted by a new one. Was it not believed until Fourier that

the temperature of planetary spaces was constantly decreasing, and do we not know today that the coldest temperatures in the ethereal regions do not exceed forty or fifty degrees below zero? Why should it not be the same with internal heat? Why, at a certain depth, should it not reach an insurmountable limit, instead of rising to the melting point of the most refractory minerals?"

My uncle placed the question in the realm of hypotheses, so I had nothing to answer.

"Well, I will tell you that true scientists, Poisson among others, have proven that, if a heat of two million degrees existed inside the globe, the incandescent gases from the molten materials would acquire such elasticity that the earth's crust could not resist it and would burst like the walls of a boiler under the force of the steam.

—That's Poisson's opinion, my uncle, that's all.

—Okay, but that is also the opinion of other distinguished geologists, that the interior of the globe is formed neither of gas nor of water, nor of the heaviest stones that we know, because, in that case, the earth would have half the weight.

—Oh! With numbers, you can prove anything you want!

—And with the facts, my boy, is it the same? Is it not a constant that the number of volcanoes has considerably decreased since the first days of the world, and, if there is central heat, can we not conclude that it tends to weaken?

—My uncle, if you enter into the realm of supposition, I have nothing more to discuss.

—And I must say that my opinion is joined by the opinions of very competent people. Do you remember a visit that the famous English chemist Humphry Davy paid me in 1825?

—Not at all, because I was only born nineteen years later.

—Well, Humphry Davy came to see me when he was passing through Hamburg. We discussed at length, among other things, the hypothesis

of the liquidity of the Earth's inner core. We both agreed that this liquidity could not exist, for a reason to which science has never found an answer.

—And which one? I said, a little surprised.

—This is because this liquid mass would be subject, like the Ocean, to the attraction of the moon, and consequently, twice a day, internal tides would occur which, lifting the earth's crust, would give rise to periodic earthquakes!

—But it is nevertheless evident that the surface of the globe has been subjected to combustion, and it is permissible to suppose that the outer crust cooled first, while the heat retreated to the center.

"That's wrong," replied my uncle; "the earth was heated by the combustion of its surface, and not otherwise. Its surface was composed of a large quantity of metals, such as potassium and sodium, which have the property of igniting simply on contact with air and water; these metals caught fire when atmospheric vapors fell as rain onto the ground, and little by little, as the waters penetrated the fissures in the earth's crust, they caused new fires with explosions and eruptions. Hence the volcanoes so numerous in the early days of the world."

"But that's an ingenious hypothesis!" I exclaimed, somewhat involuntarily.

"And which Humphry Davy made me aware of right here, through a very simple experiment. He created a metallic sphere made primarily of the metals I have just mentioned, and which perfectly represented our globe; when a fine dew fell on its surface, it blistered, oxidized, and formed a small mountain; a crater opened at its summit; the eruption took place and imparted such heat to the entire sphere that it became impossible to hold it in the hand."

I was really beginning to be shaken by the professor's arguments; he was making them with his usual passion and enthusiasm.

"You see, Axel," he added, "the state of the central core has raised various hypotheses among geologists; nothing less proven than this fact

of internal heat; in my opinion, it does not exist; it could not exist; we shall see, moreover, and, like Arne Saknussemm, we shall know where we stand on this great question."

"Well! yes," I replied, feeling myself gaining from this enthusiasm; "yes, we shall see it, if we can see it at all."

—And why not? Can't we rely on electrical phenomena to light our way, and even on the atmosphere, whose pressure can make it luminous as it approaches the center?

—Yes, I said, yes! That is possible, after all,

"That is certain," my uncle replied triumphantly; "but silence, do you hear! Silence about all this, and let no one have any idea of discovering the center of the earth before us."

VII

Thus ended this memorable session. This conversation gave me a fever. I left my uncle's study feeling dizzy, and there wasn't enough air in the streets of Hamburg to recover, so I made my way to the banks of the Elbe, near the steam ferry that connects the city with the Harbour railway.

Was I convinced of what I had just learned? Had I not fallen prey to Professor Lidenbrock's influence? Should I take seriously his resolve to go to the center of the Earth's mass? Had I just heard the insane speculations of a madman or the scientific deductions of a great genius? In all of this, where did truth end and error begin?

I was adrift between a thousand contradictory hypotheses, unable to latch onto any of them.

However, I remembered being convinced, although my enthusiasm was beginning to wane; but I would have liked to leave immediately and not take the time to reflect. Yes, I certainly wouldn't have lacked the courage to pack my suitcase right now.

It must be admitted, however, that an hour later this overexcitement subsided; my nerves relaxed, and from the deep abysses of the earth I rose to its surface.

"That's absurd!" I cried; "it makes no sense! It's not a serious proposition to make to a sensible boy. None of it exists. I slept badly, I had a bad dream."

However, I had followed the banks of the Elbe and gone around the city. After going up the port, I had arrived at the road to Altona. A premonition guided me, a premonition justified, for I soon saw my little Graüben which, with its nimble foot, was bravely returning to Hamburg.

"Graüben!" I shouted to him from afar.

The young girl stopped, a little flustered, I imagine, to hear herself being called like that on a main road. In ten steps I was beside her.

"Axel!" she exclaimed in surprise. "Ah! You came to meet me! That's right, sir."

But, looking at me, Graüben could not mistake my worried, distraught expression.

"What's wrong?" she said, holding out her hand to me.

"What I have, Graüben!" I cried.

In two seconds and three sentences, my lovely Virlandaise was fully aware of the situation. For a few moments, she remained silent. Was her heart beating as fast as mine? I don't know, but her hand didn't tremble in mine. We walked about a hundred steps without speaking.

"Axel!" she finally said to me.

—My dear Graüben!

"That will be a wonderful trip."

I jumped at those words.

"Yes, Axel, and worthy of a scholar's nephew. It is good that a man has distinguished himself by some great undertaking!"

—What! Graüben, you're not dissuading me from attempting such an expedition?

—No, dear Axel, I would gladly accompany you and your uncle, if a poor girl were not to be an embarrassment to you.

—Are you telling the truth?

"I'm telling the truth."

Ah! Women, young girls, feminine hearts, always so incomprehensible! When you are not the most timid of beings, you are the bravest! Reason has no place in your presence. What! This child was

encouraging me to take part in this expedition! She wouldn't have been afraid to try the adventure. She was urging me on, me whom she nevertheless loved!

I was bewildered and, why not say it, ashamed.

"Graüben," I continued, "we'll see if you still speak like that tomorrow.

"Tomorrow, dear Axel, I will speak as I do today."

Graüben and I, holding hands but maintaining a profound silence, continued on our way; I was broken by the emotions of the day.

"After all," I thought, "the calends of July are still a long way off, and many things will happen between now and then that will cure my uncle of his mania for traveling underground."

Night had fallen when we arrived at the house on Königstrasse. I expected to find the house quiet, my uncle in bed as usual, and the maid Martha giving the dining room the last dusting of the evening.

But I had not counted on the professor's impatience. I found him shouting, bustling about in the middle of a group of porters who were unloading some goods in the alley; the old servant didn't know where to look.

"But come on, Axel; hurry up, you wretch!" cried my uncle from as far away as he could see me, "and your trunk which isn't packed, and my papers which aren't in order, and my travel bag whose key I can't find, and my gaiters which haven't arrived!"

I remained stunned. My voice failed me to speak. My lips could barely articulate these words:

"So we're leaving?"

—Yes, you poor boy, who goes for a walk instead of being here!

"Are we leaving?" I repeated in a weak voice.

"Yes, the day after tomorrow morning, first thing."

I couldn't hear any more, and I ran away to my small room.

There was no longer any doubt about it; my uncle had just spent his afternoon acquiring some of the objects and utensils necessary for his journey; the alley was cluttered with rope ladders with knots, torches, gourds, iron crampons, picks, iron-tipped sticks, pickaxes, enough to load at least ten men.

I had a terrible night. The next day I heard myself being called early. I was determined not to open my door. But how could I resist the gentle voice that uttered those words: "My dear Axel?"

I left my room. I thought that my defeated look, my pallor, my eyes reddened by insomnia would have their effect on Graüben and change his mind.

"Ah! my dear Axel," she said to me, "I see that you are feeling better and that the night has calmed you down.

"Calm down!" I exclaimed.

I rushed to my mirror. Well, I looked less bad than I'd thought. It was unbelievable.

"Axel," Graüben told me, "I spoke at length with my tutor. He is a bold scholar, a man of great courage, and you will remember that his blood flows in your veins. He told me about his plans, his hopes, why and how he expects to achieve his goal. He will succeed, I have no doubt. Ah! dear Axel, it is wonderful to dedicate oneself thus to science! What glory awaits Mr. Lidenbrock and will reflect upon his companion! Upon your return, Axel, you will be a man, his equal, free to speak, free to act, free, finally, to..."

The young girl, blushing, didn't finish. Her words revived me. However, I still didn't want to believe we were leaving. I led Graüben towards the professor's office.

"Uncle," I said, "so it is quite decided that we are leaving?"

—What! You doubt it?

"No," I said, so as not to upset him. "I would simply like to ask you what the urgency is."

—But time! Time that flees with irreparable speed!

—However, we are only on May 26th, and until the end of June...

—Hey! Do you really think, you ignorant fool, that one can get to Iceland so easily? If you hadn't left me like a madman, I would have taken you to the Copenhagen office, to Liffender and Co. There, you would have seen that from Copenhagen to Reykjavik there is only one service.

-Well?

"Well! If we waited until June 22nd, we'd arrive too late to see the shadow of Scartaris caress the crater of Snæfells; we must therefore get to Copenhagen as quickly as possible to find a means of transport. Go pack your bags!"

There wasn't a word to reply. I went back up to my room. Graüben followed me. She was the one who packed the necessary items for my trip into a small suitcase. She was no more flustered than if it had been a stroll in Lübeck or Heligoland; her small hands moved about without haste; she spoke calmly; she gave me the most sensible reasons in favor of our expedition. She charmed me, and I felt a great deal of anger toward her. Sometimes I wanted to lose my temper, but she paid no heed and methodically continued her quiet work.

Finally, the last strap of the suitcase was fastened. I went down to the ground floor.

During that day, suppliers of physics instruments, weapons, and electrical appliances had multiplied. Good Martha was losing her mind.

"Is the gentleman crazy?" she said to me.

I nodded.

"And he's taking you with him?"

Same statement.

"Where?" she said.

I pointed to the center of the earth.

"To the cellar?" cried the old servant.

"No," I said finally, "lower!"

Evening arrived. I was no longer aware of the time that had passed.

"See you tomorrow morning," said my uncle, "we're leaving at six o'clock sharp."

At ten o'clock I fell onto my bed like an inert mass.

During the night my terrors returned.

I spent it dreaming of abysses! I was delirious. I felt myself gripped by the professor's strong hand, dragged down, damaged, bogged down! I was falling into unfathomable precipices with the increasing speed of bodies abandoned in space. My life was nothing but an endless fall.

I woke up at five o'clock, exhausted and overcome with emotion. I went down to the dining room. My uncle was at the table. He was devouring his food. I watched him with horror. But Graüben was there. I said nothing. I couldn't eat.

At half past five, a rumble could be heard in the street. A large car was arriving to take us to the Altona railway. It was soon filled with my uncle's parcels.

"And your trunk?" he said to me.

"It's ready," I replied, faltering.

"Hurry up and get it down, or you'll make us miss the train!"

Fighting against my destiny then seemed impossible. I went back up to my room, and, letting my suitcase slide down the stairs, I rushed after it.

At that moment, my uncle was solemnly handing over the reins of his house to Graüben. My lovely Virlandaise remained her usual calm. She kissed her guardian, but couldn't hold back a tear as she brushed her soft lips against my cheek.

"Graüben!" I cried.

"Go, my dear Axel, go," she told me, "you are leaving your fiancée, but you will find your wife when you return."

I hugged Graüben and got into the car. Martha and the girl, from the doorway, waved a last goodbye to us; then the two horses, urged on by their driver's whistle, galloped off down the road to Altona.

VIII

Altona, a veritable suburb of Hamburg, is the terminus of the Kiel railway line which was to take us to the shores of the Belt. In less than twenty minutes, we entered the territory of Holstein.

At 6:30 the carriage stopped in front of the station; my uncle's numerous parcels and bulky travel items were unloaded, transported, weighed, labeled, and reloaded into the luggage car, and at 7:00 we were seated opposite each other in the same compartment. The steam hissed, the locomotive started moving. We were off.

Was I resigned? Not yet. However, the fresh morning air, the details of the road quickly renewed by the speed of the train, distracted me from my great concern.

As for the professor's thoughts, they were clearly ahead of the slow-moving train, driven by his impatience. We were alone in the carriage, but without speaking. My uncle meticulously examined his pockets and travel bag. I could see that he had everything he needed to carry out his plans.

Among other things, a carefully folded sheet of paper bore the letterhead of the Danish chancery, with the signature of Mr. Christiensen, consul in Hamburg and a friend of the professor. This should make it very easy for us to obtain recommendations in Copenhagen for the governor of Iceland.

I also caught sight of the infamous document, carefully hidden in the most secret pocket of the wallet. I cursed it from the bottom of my heart and resumed my examination of the countryside. It was a vast expanse of rather uninteresting, monotonous, loamy, and fairly fertile plains: a landscape very favorable to the construction of a railway and conducive to those straight lines so dear to railway companies.

But this monotony did not have time to tire me, because, three hours after our departure, the train stopped in Kiel, a stone's throw from the sea.

Our luggage was checked in for Copenhagen, so there was nothing to worry about. However, the professor watched it anxiously as it was transported to the steamship. There, it disappeared down into the hold.

My uncle, in his haste, had calculated the train and boat connections so well that we had a whole day to waste. The steamer *Ellenora* was n't leaving until nightfall. Hence a nine-hour rant, during which the irascible traveler cursed the boat and railway administrations and the governments that tolerated such abuses. I had to join him when he confronted the captain of the *Ellenora* about it. He wanted to force him to get going without delay. The other man told him to get lost.

In Kiel, as elsewhere, a day has to pass. By dint of walking on the green shores of the bay at the bottom of which rises the small town, of traversing the thick woods which give it the appearance of a nest in a bundle of branches, of admiring the villas each equipped with their little cold bath house, finally of running and grumbling, we reached ten o'clock in the evening.

The smoke from the *Ellenora* swirled in the sky; the deck trembled with the shivers of the boiler; we were on board and owners of two tiered berths in the ship's only room.

At ten quarter past ten the moorings were cast off, and the steamer sped swiftly across the dark waters of the great Belt.

The night was black; there was a fine breeze and a strong sea; a few lights from the coast appeared in the darkness; later, I don't know, a flashing lighthouse glittered above the waves; that was all that remained in my memory of that first crossing.

At seven o'clock in the morning we disembarked at Korsor, a small town located on the western coast of Zealand. There we jumped off the ship onto a new railway which carried us through a country no less flat than the Holstein countryside.

It was still three hours of travel before reaching the capital of Denmark. My uncle hadn't slept a wink all night. In his impatience, I think he was pushing the carriage with his feet.

Finally, he caught sight of an opening in the sea.

"The Sund!" he exclaimed.

On our left there was a large building that looked like a hospital.

"It's a madhouse," said one of our traveling companions.

"Well," I thought, "this is the kind of place where we should end our days! And, however large it may be, this hospital will still be too small to contain all of Professor Lidenbrock's madness!"

Finally, at ten o'clock in the morning, we arrived in Copenhagen; the luggage was loaded onto a carriage and taken with us to the Phoenix Hotel in Bred-Gade. It took half an hour, as the train station is located outside the city. Then my uncle, after a quick wash, led me after him. The hotel porter spoke German and English; but the professor, being a polyglot, questioned him in fluent Danish, and it was in fluent Danish that this man indicated the location of the Museum of Northern Antiquities.

The director of this curious establishment, where marvels are piled up that would allow the history of the country to be reconstructed with its old stone weapons, its goblets and its jewels, was a scholar, a friend of the consul of Hamburg, Professor Thomson.

My uncle had a glowing letter of recommendation for him. Generally, one scholar doesn't receive another very well. But here it was quite different. Mr. Thomson, ever the helpful man, gave Professor Lidenbrock, and even his nephew, a cordial welcome. To say that our secret was kept from the excellent director of the Museum is hardly necessary. We simply wanted to visit Iceland as disinterested amateurs.

Mr. Thomson placed himself entirely at our disposal, and we ran along the docks in search of a departing ship.

I had hoped that transportation would be completely lacking; but that wasn't the case at all. A small Danish schooner, the *Valkyrie*, was due to set sail for Reykjavik on June 2nd. The captain, Mr. Bjarne, was on board; his soon-to-be passenger, in his excitement, shook his hands so tightly they nearly broke. This good man was a little surprised by such an embrace. He found it perfectly natural to go to Iceland, since it was his profession. My uncle found it sublime. The worthy captain took advantage of this enthusiasm to charge us double for passage on his ship. But we weren't looking at it that closely.

"Be on board Tuesday at seven o'clock in the morning," said Mr. Bjarne after pocketing a respectable amount of cash.

We then thanked Mr. Thomson for his good care, and returned to the Phoenix Hotel.

"It's going well! It's going very well," my uncle kept repeating. "What a lucky break to have found this building ready to go! Now let's have lunch, and then go visit the city."

We went to Kongens-Nye-Torw, an irregular place where there is a post with two innocent cannons pointed at it which frighten no one. Nearby, at number 5, there was a French 'restaurant', run by a cook named Vincent; we had a decent lunch there for the moderate price of four marks each[1].

[1] 2fr. 75c. approx.

Then I took childlike pleasure in wandering through the city; my uncle let himself be led around; besides, he saw nothing, neither the insignificant palace of the king, nor the pretty seventeenth-century bridge which spans the canal in front of the Museum, nor that immense cenotaph of Torwaldsen, adorned with horrible murals and which contains inside the works of this sculptor, nor, in a rather beautiful park, the jewel-box castle of Rosenborg, nor the admirable Renaissance building of the Stock Exchange, nor its bell tower made with the intertwined tails of four bronze dragons, nor the great windmills of the ramparts, whose vast sails swelled like the sails of a ship in the sea wind.

What delightful walks my pretty Virlandaise and I would have taken, on the side of the port where the double-deckers and frigates slept peacefully under their red roofs, on the green banks of the strait, through those thick shades in which the citadel is hidden, whose cannons extend their blackish mouths between the branches of elder and willow trees!

But, alas! she was far away, my poor Graüben, and could I hope to ever see her again!

However, although my uncle noticed nothing of these enchanting sites, he was keenly struck by the sight of a certain bell tower located on the island of Amak, which forms the southwestern district of Copenhagen.

I received orders to direct our steps in that direction; I boarded a small steamboat that was in service on the canals, and, in a few moments, it docked at the Dock Yard quay.

After passing through a few narrow streets where galley slaves, dressed in yellow and gray trousers, toiled under the watchful eyes of their overseers, we arrived at Vor-Frelzers-Kirk. The church itself was unremarkable. But here's why its rather tall bell tower had caught the professor's attention: from the platform, an external staircase wound its way around the spire, its spirals unfurling into the sky.

"Let's go up," said my uncle.

"But, vertigo?" I replied.

—All the more reason, we have to get used to it.

-However...

"Come, I tell you, let's not waste any time." We had to obey. A guard, who lived on the other side of the street, gave us a key, and the climb began.

My uncle walked briskly ahead of me. I followed him, not without terror, for my head spun with deplorable ease. I had neither the poise of eagles nor the insensitivity of their nerves.

As long as we were trapped inside the spiral staircase, everything was fine; but after one hundred and fifty steps, the air hit me in the face; we had reached the platform of the bell tower. There began the aerial staircase, guarded by a slender railing, and whose steps, growing ever narrower, seemed to climb towards infinity.

"I can never!" I cried.

"Are you a coward, by any chance? Get in!" replied the professor mercilessly.

I had no choice but to follow him, clinging on. The open air made me dizzy; I felt the bell tower sway in the gusts; my legs gave way; I soon climbed onto my knees, then onto my stomach; I closed my eyes; I felt the sickness of space.

Finally, my uncle pulling me by the collar, I arrived near the ball.

"Look," he told me, "and look closely! We must *learn from the abyss!* "

I had to open my eyes. I could see the houses, flattened and as if crushed by a fall, amidst the haze of smoke. Above my head, disheveled clouds drifted by, and, by a reversal of perspective, they appeared motionless, while the church steeple, the sphere, and I were swept along with fantastic speed. In the distance, to one side stretched the verdant countryside; to the other, the sea sparkled under a beam of sunlight. The Sound unfurled at the tip of Elsinore, with a few white sails, like the wings of seagulls, and in the eastern mist, the barely blurred coasts of Sweden rippled. All this immensity swirled before my eyes.

Nevertheless, I had to get up, stand straight, and look around. My first lesson in vertigo lasted an hour. When I was finally allowed to go back down and touch the solid cobblestones of the streets with my feet, I was sore.

"We'll start again tomorrow," said my teacher.

And indeed, for five days I resumed this dizzying exercise, and, willingly or unwillingly, I made significant progress in the art of "high contemplations".

IX

The day of departure arrived. The day before, the obliging Mr. Thomson had brought us urgent letters of recommendation for Count Trampe, Governor of Iceland, Mr. Pietursson, the Bishop's coadjutor, and Mr. Finsen, Mayor of Reykjavik. In return, my uncle gave him the warmest handshakes.

On the 2nd, at six o'clock in the morning, our precious luggage was returned to the *Valkyrie*. The captain led us to rather narrow cabins arranged under a kind of deckhouse.

"Do we have a favorable wind?" asked my uncle.

"Excellent," replied Captain Bjarne. "A southeast wind. We'll leave the Sound on a broad reach and with all sails set."

A few moments later, the schooner, with her foresail, brigantine, topsail, and topgallant sail, weighed anchor and set full sail into the strait. An hour later, the capital of Denmark seemed to sink into the distant waves, and the *Valkyrie* skimmed the coast of Elsinore. In my nervous state, I half expected to see Hamlet's ghost wandering on the legendary terrace.

"Sublime madman!" I said, "you would surely approve of us! You might even follow us to the center of the globe to seek a solution to your eternal doubt!"

But nothing appeared on the ancient walls; the castle is, moreover, much younger than the heroic Prince of Denmark. It now serves as a sumptuous lodge for the gatekeeper of the Sound, through which fifteen thousand ships of all nations pass each year.

Krongborg Castle soon disappeared into the mist, as did Helsingborg Tower, erected on the Swedish shore, and the schooner heeled slightly under the breezes of the Kattegat.

The *Valkyrie* was a fine sailing vessel, but with a sailing ship you never really know what to expect. She was carrying coal, household utensils, pottery, woolen clothing and a cargo of wheat to Reykjavik; five crewmen, all Danes, were enough to maneuver her.

"How long will the crossing take?" my uncle asked the captain.

"About ten days," he replied, "if we don't encounter too many northwesterly squalls across the Faroe Islands."

—But surely you are not prone to experiencing considerable delays?

"No, Mr. Lidenbrock; rest assured, we will arrive."

Towards evening the schooner rounded Cape Skagen at the northern tip of Denmark, crossed the Skager-Rak during the night, rounded the tip of Norway abeam of Cape Lindness and entered the North Sea.

Two days later, we sighted the coasts of Scotland at Peterheade, and the *Valkyrie* headed towards the Faroe Islands, passing between the Orkney Islands and the Seethland Islands.

Soon our schooner was battered by the waves of the Atlantic; she had to tack against the north wind and did not reach the Faroe Islands without difficulty. On the 3rd, the captain sighted Myganness, the easternmost of these islands, and from that moment he sailed straight for Cape Portland, located on the southern coast of Iceland.

The crossing presented no remarkable incidents. I endured the trials of the sea quite well; my uncle, to his great dismay, and to his even greater shame, did not cease to be ill.

He was therefore unable to discuss the Sneffels with Captain Bjarne, regarding communication methods and transport facilities; he had to postpone his explanations until his arrival and spent all his time lying in his cabin, the bulkheads creaking with the heavy pitching. Admittedly, he somewhat deserved his fate.

On the 11th, we rounded Cape Portland; the weather, clear at the time, allowed us to see Myrdals Yocul, which overlooks it. The cape consists of a large, steep-sided hill, standing alone on the beach.

The *Valkyrie* kept a safe distance from the coast, extending westward through numerous schools of whales and sharks. Soon, a huge, open rock appeared, through which the foaming sea crashed furiously. The Westman Islands seemed to rise from the ocean, like a scattering of rocks across the liquid plain. From that moment, the schooner put up a good distance to round Cape Reykjaness, which closes off the western corner of Iceland.

The very rough sea prevented my uncle from going up on deck to admire these jagged coasts battered by the southwest winds.

Forty-eight hours later, after a storm that forced the schooner to flee under bare sail, they sighted the Skagen Point beacon to the east, whose treacherous rocks extend a considerable distance underwater. An Icelandic pilot came aboard, and three hours later, the *Valkyrie* anchored off Reykjavik in Faxa Bay.

The professor finally emerged from his cabin, a little pale, a little defeated, but still enthusiastic, and with a look of satisfaction in his eyes.

The townspeople, particularly interested in the arrival of a ship from which everyone has something to take, gathered on the quay.

My uncle was eager to abandon his floating prison, not to say his hospital. But before leaving the deck of the schooner, he led me to the bow, and there, with his finger, he showed me, in the northern part of the bay, a high mountain with two peaks, a double cone covered with eternal snows.

"The Sneffels!" he cried, "the Sneffels!"

Then, after gesturing for absolute silence, he climbed into the canoe that was waiting for him. I followed him, and soon we were setting foot on Icelandic soil.

First, a handsome man appeared, dressed in a general's uniform. However, he was merely a magistrate, the island's governor, Baron Trampe himself. The professor recognized who he was dealing with. He handed the governor his letters from Copenhagen, and a brief

conversation ensued in Danish, in which I remained completely uninvolved, and with good reason. But from this initial exchange, the following emerged: that Baron Trampe placed himself entirely at Professor Lidenbrock's disposal.

My uncle received a very kind welcome from the mayor, Mr. Finson, who was no less military in dress than the governor, but also peaceful in temperament and profession.

As for the coadjutor, Mr. Pictursson, he was currently on an episcopal tour of the Northern Bailiwick; we had to temporarily forgo being presented to him. But a charming man, whose assistance proved invaluable, was Mr. Fridriksson, professor of natural sciences at the Reykjavik school. This unassuming scholar spoke only Icelandic and Latin; he came to offer me his services in the language of Horace, and I felt that we were destined to understand each other. He was, in fact, the only person with whom I was able to converse during my stay in Iceland.

Of the three rooms in his house, this excellent man put two at our disposal, and soon we were settled there with our luggage, the quantity of which somewhat surprised the inhabitants of Reykjavik.

"Well, Axel," my uncle told me, "that's fine, and the hardest part is over."

"What, the most difficult part?" I exclaimed.

—No doubt, all we have to do is get off!

—If you see it that way, you're right; but after going down, you'll have to go back up, I imagine?

—Oh! That doesn't worry me much! Come now! There's no time to lose. I'll go to the library. Perhaps there's some manuscript by Saknussem there, and I'd be very glad to consult it.

—So, in the meantime, I'm going to visit the city. Won't you do the same?

—Oh! That interests me very little. What is curious about this land of Iceland is not above, but below.

I went outside and wandered around aimlessly.

Getting lost in Reykjavik's two streets wouldn't have been easy. So I didn't have to ask for directions, which, in the language of gestures, can lead to many mishaps.

The town stretches across rather low-lying, marshy ground between two hills. A vast lava flow covers it on one side and slopes gently down to the sea. On the other side lies the wide bay of Faxa, bordered to the north by the enormous Snæfells Glacier, where the *Valkyrie* was currently anchored alone. Normally, English and French fisheries officers are stationed offshore there; but they were on duty on the eastern coasts of the island at that time.

The longer of Reykjavik's two streets runs parallel to the shore; there live the merchants and traders, in wooden huts made of horizontally laid red beams; the other street, located further west, runs towards a small lake, between the houses of the bishop and other figures unrelated to commerce. I had soon walked these dreary and sad streets; I sometimes glimpsed a patch of faded grass, like an old wool rug worn thin by use, or some semblance of an orchard, whose sparse vegetables—potatoes, cabbages, and lettuces—would have looked perfectly at home on a Lilliputian table; a few sickly wallflowers also tried to bask in the sun.

Towards the middle of the non-commercial street, I found the public cemetery enclosed by an earthen wall, and in which there was plenty of space. Then, in a few strides, I arrived at the governor's house, a hovel compared to Hamburg's town hall, a palace next to the huts of the Icelandic population.

Between the small lake and the town stood the church, built in the Protestant style and constructed of calcined stones whose extraction costs are borne by the volcanoes themselves; in the strong west winds, its red tile roof would obviously scatter in the air to the great detriment of the faithful.

On a nearby rise, I glimpsed the National School, where, as I later learned from our host, Hebrew, English, French, and Danish were taught—four languages of which, to my shame, I didn't know a single word. I would have been the least of the forty students in that small college, and unworthy of sleeping with them in those two-compartment closets where even the most delicate among us would suffocate on their very first night.

In three hours I had visited not only the villa, but its surroundings as well. The overall appearance was singularly bleak. No trees, virtually no vegetation. Everywhere the sharp edges of volcanic rock. The Icelanders' huts are made of earth and peat, and their walls slope inward; they resemble roofs laid on the ground. Only these roofs are relatively fertile meadows. Thanks to the warmth of the dwellings, the grass grows quite well, and it is carefully cut at haymaking time, otherwise the livestock would graze on these verdant dwellings.

During my excursion, I encountered few inhabitants; returning from the main street, I saw most of the population busy drying, salting, and loading cod, the principal export. The men appeared robust but heavy, a sort of blond German with pensive eyes, who felt somewhat removed from humanity, poor exiles relegated to this land of ice, which nature should have made Eskimos of, since it condemned them to live on the edge of the Arctic Circle! I tried in vain to catch a smile on their faces; they sometimes laughed with a sort of involuntary muscle contraction, but they never smiled.

Their costume consisted of a coarse black woolen jacket known throughout Scandinavia as a "vadmél", a wide-brimmed hat, trousers with red piping and a piece of leather folded as a shoe.

The women, with sad and resigned faces, of a rather pleasant type, but without expression, were dressed in a bodice and skirt of dark "vadmél": as girls, they wore on their hair braided into garlands a small brown knitted cap; as brides, they surrounded their heads with a colored handkerchief, surmounted by a crest of white canvas.

After a pleasant walk, when I returned to Mr. Fridriksson's house, my uncle was already there with his host.

X

Dinner was ready; it was devoured greedily by Professor Lidenbrock, whose enforced diet on board had turned his stomach into a deep abyss. The meal, more Danish than Icelandic, was unremarkable in itself; but our host, more Icelandic than Danish, reminded me of the heroes of ancient hospitality. It seemed obvious to me that we were more at his house than he was at his.

The conversation took place in the native language, which my uncle interspersed with German and Mr. Fridriksson with Latin, so that I could understand it. It revolved around scientific questions, as befits scholars; but Professor Lidenbrock maintained the utmost reserve, and his eyes, with each sentence, urged me to absolute silence regarding our future plans.

First, Mr. Fridriksson inquired of my uncle about the results of his research at the library.

"Your library!" he exclaimed, "it consists only of mismatched books on almost deserted shelves."

—What! replied Mr. Fridriksson, we possess eight thousand volumes, many of which are precious and rare, works in the old Scandinavian language, and all the new releases that Copenhagen supplies us with every year.

—Where did you get these eight thousand volumes? For my own use...

"Oh, Mr. Lidenbrock, they're everywhere! We have a taste for learning on our old island of ice! There's not a farmer, not a fisherman who doesn't know how to read and does read. We believe that books, instead of languishing behind iron bars, away from prying eyes, are meant to be worn out by readers. So these volumes pass from hand to hand, leafed

through, read and reread, and often they don't return to their shelves for a year or two."

—Meanwhile, replied my uncle with a certain amount of resentment, the foreigners...

"What do you expect! Foreigners have their libraries in their own countries, and above all, our peasants must be educated. I repeat, the love of learning is in the Icelandic blood. Therefore, in 1816, we founded a Literary Society which is thriving; foreign scholars are honored to be members; it publishes books for the education of our compatriots and renders real service to the country. If you would like to be one of our corresponding members, Mr. Lidenbrock, you would give us the greatest pleasure."

My uncle, who already belonged to about a hundred scientific societies, accepted with a grace that touched Mr. Fridriksson.

"Now," he continued, "please tell me which books you hoped to find in our library, and perhaps I can give you some information about them."

I looked at my uncle. He hesitated to answer. It directly concerned his plans. However, after thinking it over, he decided to speak.

"Mr. Fridriksson," he said, "I wanted to know if, among the old books, you possessed those of Arne Saknussemm?"

—Arne Saknussemm! replied the professor from Reykjavik; you mean that sixteenth-century scholar, who was a great naturalist, a great alchemist, and a great traveler?

-Precisely

—One of the glories of Icelandic literature and science?

—As you say.

—A man illustrious above all others?

—I agree with you.

—And whose audacity equaled his genius?

"I see you know him well." My uncle was overjoyed to hear his hero spoken of like that. He devoured Mr. Fridriksson with his eyes.

"Well!" he asked, "his works?"

—Ah! We don't have his works!

—What! In Iceland?

—They do not exist in Iceland or anywhere else.

—And why?

—Because Arne Saknussem was persecuted for heresy, and in 1573 his works were burned in Copenhagen by the executioner.

—Very good! Perfect! cried my uncle, to the great scandal of the natural sciences professor.

"Huh?" he said.

—Yes! Everything is explained, everything is connected, everything is clear, and I understand why Saknussem, blacklisted and forced to hide the discoveries of his genius, had to bury the secret in an incomprehensible cryptogram...

—What secret? asked Mr. Fridriksson quickly.

"A secret that... of which..." my uncle stammered.

"Do you happen to have any particular documents?" our host continued.

—No. I was just making a guess.

"Very well," replied Mr. Fridriksson, who kindly refrained from pressing the matter when he saw his interlocutor's confusion. "I hope," he added, "that you will not leave our island without having drawn upon its mineral wealth?"

"Certainly," replied my uncle; "but I'm a little late; have scholars already passed through here?"

—Yes, Mr. Lidenbrock; the work of Messrs. Olafsen and Povelsen carried out by order of the King, the studies of Troil, the scientific mission of Messrs. Gaimard and Robert, aboard the French corvette *La Recherche* [1], and most recently, the observations of the scientists embarked on the frigate *La Reine-Hortense*, have powerfully contributed to the exploration of Iceland. But, believe me, there is still much to be done.

[1] *The Search* was sent in 1835 by Admiral Duperré to find traces of a lost expedition, that of M. de Blosseville and *the Lilloise*, of which no news had ever been heard.

"You think so?" asked my uncle in a good-natured manner, trying to moderate the flash in his eyes.

—Yes. So many mountains, glaciers, and volcanoes to study, which are little known! And look, without going any further, see this mountain rising on the horizon; it is the Snæfells.

—Ah! said my uncle, Sneffels.

—Yes, one of the most curious volcanoes, and one whose crater is rarely visited.

-Extinct?

—Oh! Extinct for five hundred years.

—Well! replied my uncle, who was frantically crossing his legs to keep from jumping in the air, I want to start my geological studies with this Seffel... Fessel... what do you say?

"Sneffels," continued the excellent Mr. Fridriksson.

This part of the conversation had taken place in Latin; I had understood everything, and I could hardly keep a straight face seeing my uncle contain his satisfaction which was overflowing on all sides; he took on a small innocent air which resembled the grimace of an old devil.

"Yes," he said, "your words have decided me; we will try to climb this Sneffels, perhaps even to study its crater!"

"I very much regret," replied Mr. Fridriksson, "that my occupations do not allow me to be absent; I would have accompanied you with pleasure and profit."

"Oh no, oh no," my uncle replied quickly; "we don't want to disturb anyone, Mr. Fridriksson; I thank you from the bottom of my heart. The presence of such a scholar as yourself would have been very useful, but the duties of your profession..."

I like to think that our host, in the innocence of his Icelandic soul, did not understand my uncle's big tricks.

"I strongly approve of your starting with this volcano, Mr. Lidenbrock," he said; "you will make a rich harvest of curious observations there. But tell me, how do you intend to reach the Sneffels peninsula!"

—By sea, crossing the bay. It's the fastest route.

—No doubt; but it is impossible to take.

-For what?

—Because we don't have a single canoe in Reykjavik.

-Devil!

—We'll have to go overland, following the coast. It will be longer, but more interesting.

—Okay. I'll see about getting a guidebook.

—I happen to have one to offer you.

—A safe, intelligent man?

—Yes, a resident of the peninsula. He is a very skilled eider hunter, and you will be pleased with him. He speaks perfect Danish.

—And when will I be able to see him?

—Tomorrow, if you like.

—Why not today?

—That's because he's not arriving until tomorrow.

"See you tomorrow then," replied my uncle with a sigh.

This important conversation ended a few moments later with warm thanks from the German professor to the Icelandic professor. During this dinner, my uncle had just learned some important things, including the story of Saknussem, the reason for his mysterious document, that his host would not be accompanying him on his expedition, and that a guide would be at his command the very next day.

XI

In the evening, I took a short walk along the shores of Reykjavik, and I returned early to my bed of thick planks, where I slept soundly.

When I woke up, I heard my uncle talking loudly in the next room. I got up immediately and hurried to join him.

He was speaking Danish with a tall, powerfully built man. This strapping fellow must have possessed uncommon strength. His eyes, set in a very large and rather simple-minded head, struck me as intelligent. They were a dreamy blue. Long hair, which would have passed for red even in England, fell over his athletic shoulders. This native moved with supple grace, but he rarely moved his arms, like a man who either didn't know or disdained the language of gestures. Everything about him revealed a temperament of perfect calm, not indolent, but tranquil. One sensed that he asked nothing of anyone, that he worked as he pleased, and that, in this world, his philosophy could be neither astonished nor disturbed.

I noticed the nuances of this character in the way the Icелander listened to his interlocutor's passionate verbiage. He remained with his arms crossed, motionless amidst my uncle's numerous gestures; to deny something, his head turned from left to right; he inclined to affirm it, and even then so slightly that his long hair barely moved; it was economy of movement pushed to the point of avarice.

Certainly, looking at this man, I would never have guessed his profession as a hunter; he certainly didn't frighten the game, but how could he reach it?

Everything became clear when Mr. Fridriksson told me that this unassuming man was simply an "eiderdown hunter," a bird whose down is the island's greatest asset. Indeed, this down is called eiderdown, and it doesn't take much effort to collect it.

In the early days of summer, the female eider, a kind of pretty duck, builds her nest among the fjord rocks^[1] whose coast is fringed. Once built, she lines the nest with fine feathers she plucks from her belly. Immediately, the hunter, or rather the trader, arrives, takes the nest, and the female begins her work anew. This continues as long as she has any down left. When she has completely shed her feathers, it is the male's turn to pluck them. However, since the male's hard, coarse down has no commercial value, the hunter does not bother to steal his brood's nest. The nest is thus completed; the female lays her eggs; the chicks hatch, and the following year, the harvesting of down begins again.

[1] Name given to narrow gulfs in Scandinavian countries.

However, since the eider does not choose steep rocks to build its nest, but rather easy, horizontal rocks that extend out to sea, the Icelandic hunter could carry out his work without much commotion. He was a farmer who had neither to sow nor to cut his harvest, but only to reap it.

This serious, phlegmatic, and silent man was named Hans Bjelke; he came on the recommendation of Mr. Fridriksson. He was to be our future guide.

His manners contrasted sharply with those of my uncle.

However, they came to an agreement easily. Neither of them cared about the price; one was ready to accept what was offered, the other ready to give what was asked of him. Never was a deal easier to conclude.

However, the agreements stipulated that Hans would take us to the village of Stapi, located on the southern coast of the Snæfells peninsula, at the very foot of the volcano. It was about twenty-two miles overland, a journey to be made in two days, according to my uncle.

But when he learned that it was a matter of Danish miles of twenty-four thousand feet, he had to reduce his calculation and, given the inadequacy of the roads, count on seven or eight days of walking.

Four horses were to be made available to him, two to carry him and me, and two others for our luggage. Hans, as was his custom, would go on foot. He knew this part of the coast perfectly, and he promised to take the shortest route.

His contract with my uncle did not expire upon our arrival in Stapi; he remained in his service for the duration of our scientific excursions at the price of three rixdales per week^[1]. However, it was expressly agreed that this sum would be paid to the guide every Saturday evening, a *sine qua non condition* of his employment.

[1] 16fr. 08 c.

The departure was set for June 16th. My uncle wanted to give the hunter the deposit for the deal, but he refused with a single word.

"Efter," he said.

"Then," the professor told me, for my edification.

Hans, having concluded the treaty, withdrew in one piece.

"A famous man," exclaimed my uncle, "but he hardly expects the wonderful role that the future has in store for him to play."

—So he's accompanying us all the way to...

"Yes, Axel, to the center of the earth."

Forty-eight hours still remained to pass; to my great regret, I had to spend them on our preparations; all our intelligence was employed in arranging each item in the most advantageous way, the instruments on one side, the weapons on another, the tools in this bundle, the provisions in that one. Four groups in all.

The instruments included:

1. An Eigel centigrade thermometer, graduated up to one hundred and fifty degrees, which seemed to me either too much or not enough. Too much, if the ambient heat were to rise to that level, in which case

we would have been cooked. Not enough, if it was a matter of measuring the temperature of springs or any other molten material.

2. A compressed air pressure gauge, positioned to indicate pressures higher than those of the atmosphere at ocean level. Indeed, an ordinary barometer would not have sufficed, as atmospheric pressure would increase proportionally to our descent below the Earth's surface.

3° A chronometer by Boissonnas jeune from Geneva, perfectly set to the Hamburg meridian.

4° Two inclination and declination compasses.

5° A night-vision goggle.

6° Two devices by Ruhmkorff, which, by means of an electric current, provided a very portable, safe and compact light.[1]

[1] Mr. Ruhmkorff's apparatus consists of a Bunzen battery, activated by means of potassium dichromate, which is odorless. An induction coil connects the electricity produced by the battery to a specially designed lantern; inside this lantern is a glass coil from which a vacuum has been created, leaving only a residue of carbon dioxide or nitrogen. When the apparatus is in operation, this gas becomes luminous, producing a continuous whitish light. The battery and the coil are placed in a leather bag that the traveler carries over his shoulder. The lantern, placed outdoors, provides ample illumination in the deepest darkness; it allows one to venture, without fear of explosion, into the midst of the most flammable gases, and does not go out even in the deepest streams. Mr. Ruhmkorff is a learned and skilled physicist. His great discovery is his induction coil, which makes it possible to produce high-voltage electricity. In 1864, he obtained the five-yearly prize of 50,000 francs that France reserved for the most ingenious application of electricity.

The weapons consisted of two Purdley More and Co. rifles and two Colt revolvers. Why weapons? We had neither savages nor wild beasts to fear, I suppose. But my uncle seemed to value his arsenal as much as his instruments, especially a considerable quantity of guncotton, which

is impervious to moisture and whose expansive power is far superior to that of ordinary gunpowder.

The tools included two picks, two shovels, a silk ladder, three iron-tipped sticks, an axe, a hammer, a dozen iron wedges and spikes, and long knotted ropes. It made for a hefty package, as the ladder was three hundred feet long.

Finally, there were the provisions; the package wasn't large, but reassuring, because I knew that in concentrated meat and dry biscuits it contained enough food for six months. Juniper made up all the liquid, and there was a complete lack of water; but we had water bottles, and my uncle was counting on the springs to fill them; the objections I had raised about their quality, their temperature, and even their absence, had been unsuccessful.

To complete the exact list of our travel items, I will note a portable pharmacy containing blunt-bladed scissors, splints for fractures, a piece of unbleached thread ribbon, bandages and compresses, adhesive tape, a bleeding palette, all frightening things; in addition, a series of bottles containing dextrin, vulnerary alcohol, liquid lead acetate, ether, vinegar and ammonia, all drugs of unsettling use; finally the materials necessary for Ruhmkorff's devices.

My uncle had been careful not to forget the supply of tobacco, gunpowder, and tinder, nor the leather belt he wore around his waist containing a sufficient quantity of gold, silver, and paper money. Six pairs of good shoes, made waterproof by a coating of tar and elastic gum, were among the tools.

"Dressed, shod, and equipped like this, there's no reason why we shouldn't go far," my uncle told me.

The entire day of the 14th was spent arranging these various items. In the evening, we dined at Baron Trampe's house, in the company of the mayor of Reykjavik and Dr. Hyaltalin, the leading physician in the region. Mr. Fridriksson was not among the guests; I later learned that he and the governor had disagreed on an administrative matter and were not seeing each other. Therefore, I didn't have the opportunity to

understand a word that was said during this semi-official dinner. I only noticed that my uncle talked the whole time.

The following day, the 15th, the preparations were completed. Our host gave the professor considerable pleasure by presenting him with a map of Iceland, incomparably more accurate than Henderson's: the map by Mr. Olaf Nikolas Olsen, reduced to a scale of 1:400,000, and published by the Icelandic Literary Society, based on the geodetic work of Mr. Scheel Frisac and the topographical survey by Mr. Bjorn Gumlaugsonn. It was a valuable document for a mineralogist.

The last evening was spent in an intimate conversation with Mr. Fridrikssonn, for whom I felt a strong sympathy; then, the conversation was followed by a rather restless sleep, at least on my part.

At five o'clock in the morning, the neighing of four horses pawing the ground beneath my window woke me. I dressed hastily and went down to the street. There, Hans was finishing loading our luggage, practically without moving. However, he was working with uncommon skill. My uncle was making more noise than he was doing, and the guide seemed to care very little for his instructions.

Everything was finished by six o'clock. Mr. Fridriksson shook our hands. My uncle thanked him in Icelandic for his kind hospitality, and with great heartfelt sincerity. As for me, I sketched out a cordial greeting in my best Latin; then we mounted our horses, and Mr. Fridriksson, with his final farewell, uttered this verse that Virgil seemed to have composed for us, uncertain travelers on the road:

And quacunqve viam dederit fortuna sequamur.

XII

We set off under overcast but steady skies. No oppressive heat to fear, nor disastrous rain. Perfect tourist weather.

The pleasure of riding through an unknown country made me easy to accept at the start of the undertaking. I was entirely absorbed in the joy of the excursionist, a blend of desires and freedom. I was beginning to make my peace with the situation.

"Besides," I said to myself, "what do I risk? Traveling through the most curious country! Climbing a truly remarkable mountain! At worst, descending to the bottom of an extinct crater? It's quite obvious that this Saknussem did nothing else. As for the existence of a tunnel leading to the center of the globe, pure imagination! Pure impossibility! So, whatever good we can take from this expedition, let's take it, and without haggling!"

No sooner had we finished this reasoning than we left Reykjavik.

Hans walked in front, with a quick, even, and steady pace. The two horses carrying our luggage followed him, without any need for guidance. My uncle and I came next, and we didn't look too bad on our small but sturdy animals.

Iceland is one of the large islands of Europe; it measures fourteen hundred square miles in area, and has only sixty thousand inhabitants. Geographers have divided it into four quarters, and we had to cross almost obliquely the one that bears the name of the Southwestern Quarter Country, "Sudvestr Fjördungr."

Hans, upon leaving Reykjavik, had immediately followed the seashore; we crossed meager pastures that struggled to be green; yellow was more successful. The rugged peaks of the trachytic masses faded on the horizon in the eastern mists; at times a few patches of

snow, concentrating the diffuse light, shone brightly on the slopes of distant summits; some peaks, more boldly erect, pierced the grey clouds and reappeared above the shifting vapors, like reefs emerging in the open sky.

Often these chains of barren rocks jutted out towards the sea and encroached upon the pasture; but there was always enough room to pass. Our horses, moreover, instinctively chose the most suitable spots without ever slowing their pace. My uncle didn't even have the consolation of urging his mount on with his voice or whip; he wasn't allowed to be impatient. I couldn't help smiling at the sight of him so tall on his little horse, and, as his long legs grazed the ground, he resembled a six-footed centaur.

"Good beast! Good beast!" he said. "You'll see, Axel, that no animal surpasses the Icelandic horse in intelligence; snow, storms, impassable roads, rocks, glaciers—nothing stops it. It's brave, it's hardy, it's sure-footed. Never a misstep, never a reaction. Let some river, some fjord present itself to cross—and it will—you'll see it plunge into the water without hesitation, like an amphibian, and reach the opposite bank! But let's not rush it, let it do its thing, and we'll cover our ten leagues a day, one carrying the other."

"We, no doubt," I replied, "but what about the guide?"

"Oh! He doesn't worry me much. Those people walk without even noticing; this one moves so little that he shouldn't tire himself out. Besides, if necessary, I'll lend him my mount. I'd soon get cramps if I didn't get some exercise. My arms are fine, but I need to think about my legs."

However, we advanced at a brisk pace; the country was already almost deserted. Here and there, an isolated farmhouse, some solitary hut^[1], made of wood, earth, and pieces of lava, appeared like a beggar at the edge of a sunken road. These dilapidated huts seemed to implore the charity of passersby, and one might have been tempted to give them alms. In this country, roads, even paths, were completely lacking, and the vegetation, however slow-growing, quickly erased the footsteps of the few travelers.

[1] Icelandic peasant's house

Yet this part of the province, situated a stone's throw from its capital, was among the inhabited and cultivated portions of Iceland. What lands, then, could be more deserted than this desert? Half a mile in, we had yet to encounter a farmer at his cottage door, nor a wild shepherd grazing a flock less wild than himself; only a few cows and sheep left to their own devices. What, then, would be the convulsed regions, shaken by eruptive phenomena, born of volcanic explosions and subterranean upheavals?

We were destined to encounter them later; but, consulting Olsen's map, I saw that they were avoided by hugging the winding shoreline. Indeed, the great plutonic movement was concentrated mainly inland; there, the horizontal layers of superimposed rock, called traps in Scandinavian languages, the trachytic bands, the eruptions of basalt, tuff, and all kinds of volcanic conglomerates, the flows of lava and molten porphyry, had created a land of supernatural horror. I scarcely suspected then the spectacle that awaited us on the Snæfells peninsula, where this devastation wrought by nature's fury forms a formidable chaos.

Two hours after leaving Reykjavik, we arrived at the village of Gufunes, called "Aoalkirkja" or Main Church. It offered nothing remarkable. Just a few houses. Hardly enough to make a hamlet out of Germany.

Hans stopped there for half an hour; he shared our frugal lunch, answered my uncle's questions about the nature of the road with yes and no, and when asked where he intended to spend the night:

"Gardär," he simply said.

I consulted the map to find out what Gardär was. I saw a small town of that name on the shores of the Hvaljörd, four miles from Reykjavik. I showed it to my uncle.

"Only four miles!" he said. "Four miles out of twenty-two! Now that's a nice walk."

He wanted to make an observation to the guide, who, without answering him, picked up his hair again and started walking again.

Three hours later, still treading the discolored grass of the pastures, we had to go around the Kollafjörð, an easier and shorter detour than a crossing of this gulf; soon we entered a "pingstaoer", a place of communal jurisdiction, named Ejulberg, and whose bell tower would have rung noon, if Icelandic churches had been rich enough to own a clock; but they are very much like their parishioners, who have no watches, and who do without them.

There the horses were refreshed; then, taking a narrow shore between a chain of hills and the sea, they carried us in one go to the "aoalkirkja" of Brantar, and a mile further on to Saurböer "annexia", an annex church, situated on the southern shore of the Hvalfjörð.

It was then four o'clock in the evening; we had covered four miles [1].

[1] Eight leagues.

The fjord was at least half a mile wide at this point; the waves crashed noisily against the sharp rocks; this gulf widened between walls of rock, a kind of sheer escarpment three thousand feet high and remarkable for its brown layers separated by beds of reddish-hued tufa. However clever our horses might be, I didn't have high hopes for crossing such a vast arm of the sea on the back of a quadruped.

"If they're smart," I said, "they won't try to get through. In any case, I'll make sure I'm smart for them."

But my uncle wouldn't wait; he spurred his horse towards the shore. His mount sniffed the last ripple of the waves and stopped; my uncle, with his own instincts, urged it on. The animal refused again, shaking its head. Then came curses and blows of the whip, but the beast bucked and began to unseat its rider; finally, the little horse, bucking, pulled away from the professor's legs and left him planted upright on two stones of the shore, like the Colossus of Rhodes.

"Ah! cursed animal!" cried the rider, suddenly transformed into a pedestrian and as ashamed as a cavalry officer who had become an

infantryman.

—“Farja,” said the guide, touching her shoulder.

—What! A baccalaureate?

—“Der,” replied Hans, pointing to a boat.

"Yes," I exclaimed, "there's a ferry."

—So it had to be said! Well then, let's go!

—“Tidvatten,” replied the guide.

—What did he say?

"He says tide," replied my uncle, translating the Danish word for me.

—Perhaps we have to wait for the tide?

—“Förbida?” asked my uncle.

—“Yes,” replied Hans.

My uncle stamped his foot, while the horses headed towards the ferry.

I fully understood the need to wait for a certain point in the tide before attempting the crossing of the fjord, the point where the sea, having reached its greatest height, is slack. Then the ebb and flow have no noticeable effect, and the ferry is not at risk of being swept away, either to the bottom of the gulf or into the open ocean.

The opportune moment didn't arrive until six o'clock in the evening; my uncle, myself (the guide), two ferrymen, and the four horses had taken our places in a rather fragile, flat-bottomed boat. Accustomed as I was to the steam ferries on the Elbe, I found the boatmen's oars a sorry, mechanical contraption. It took more than an hour to cross the fjord; but finally, the crossing was made without incident.

Half an hour later, we reached the "aoalkirkja" of Gardär.

XIII

It should have been night, but below the sixty-fifth parallel, the daytime light of the polar regions should not have surprised me; in Iceland, during the months of June and July, the sun does not set.

Nevertheless, the temperature had dropped; I was cold, and above all, hungry. The "boer" who opened his door hospitably to receive us was a welcome sight.

It was a peasant's house, but in terms of hospitality, it was fit for a king. Upon our arrival, the master came and shook our hands, and, without further ado, beckoned us to follow him.

Following him was indeed impossible, for accompanying him would have been impossible. A long, narrow, dark passageway led into this dwelling, built of roughly hewn beams, and provided access to each of the four rooms: the kitchen, the weaving workshop, the "badstofa," the family bedroom, and, the best of all, the guest room. My uncle, whose height had not been considered when the house was built, inevitably bumped his head three or four times against the projecting ceiling.

We were shown into our room, a sort of large hall with an earthen floor and a window whose panes were made of rather opaque sheepskin. The bedding consisted of dry fodder thrown into two wooden frames painted red and decorated with Icelandic sayings. I hadn't expected such comfort; however, the house was filled with a strong smell of dried fish, pickled meat, and sour milk, which my sense of smell found quite unpleasant.

When we had put aside our traveler's harness, the host's voice was heard, inviting us to go into the kitchen, the only room where a fire was lit, even in the coldest weather.

My uncle hastened to obey this friendly injunction. I followed him.

The kitchen fireplace was of an antique design; in the middle of the room, a stone served as the only hearth; in the roof, a hole through which the smoke escaped. This kitchen also served as a dining room.

Upon our arrival, the host, as if he had not yet seen us, greeted us with the word "saellvertu," which means "be happy," and he came to kiss us on the cheek.

His wife, after him, pronounced the same words, accompanied by the same ceremony; then the two spouses, placing their right hand on their heart, bowed deeply.

I hasten to add that the Icelandic woman was the mother of nineteen children, all of them, big and small, swarming pell-mell amidst the swirls of smoke from the hearth that filled the room. Every few moments I glimpsed a small, blond, slightly melancholy head emerging from the fog. They looked like a garland of angels whose faces hadn't been washed thoroughly enough.

My uncle and I gave this "brood" a very warm welcome, and soon there were three or four of these little ones on our shoulders, as many on our laps, and the rest between our legs. Those who could talk repeated "saellvertu" in every imaginable tone. Those who couldn't talk only shouted all the more.

This concert was interrupted by the announcement of the meal. At that moment the hunter returned, who had just provided for the horses' food, that is to say, he had economically let them loose across the fields; the poor beasts had to be content with grazing on the sparse moss of the rocks, some innutritious fucus, and the next day they would not fail to come of their own accord to resume the work of the previous day.

"Saellvertu," Hans said as he entered.

Then calmly, automatically, without one kiss being more pronounced than another, he kissed the host, the hostess and their nineteen children.

The ceremony over, twenty-four of us sat down to eat, and consequently, we were packed in like sardines, in the truest sense of the expression. The luckiest among us had only two children on their laps.

However, silence fell over this small world when the soup arrived, and the natural taciturnity, even among Icelandic children, reasserted itself. The host served us a lichen soup, not unpleasant at all, followed by an enormous portion of dried fish swimming in butter that had been soured for twenty years, and consequently, according to Icelandic gastronomic standards, far preferable to fresh butter. This was accompanied by "skyr," a kind of curdled milk, served with biscuits and flavored with juniper berry juice; finally, for a drink, whey mixed with water, called "blanda" in the country. Whether this peculiar food was good or not was something I couldn't judge. I was hungry, and for dessert, I swallowed every last bite of a thick buckwheat porridge.

The meal finished, the children disappeared; the adults gathered around the hearth where peat, heather, cow dung, and dried fish bones were burning. Then, after this "warming up," the various groups returned to their respective rooms. The hostess offered to remove our stockings and trousers, as was the custom; but, upon our most gracious refusal, she did not insist, and I was finally able to curl up in my bed of fodder.

The next day, at five o'clock, we said goodbye to the Icelandic farmer; my uncle had a lot of trouble getting him to accept a decent wage, and Hans gave the signal to leave.

A hundred paces from Gardär, the terrain began to change; the ground became marshy and less conducive to walking. To the right, the mountain range stretched endlessly like an immense system of natural fortifications, whose counterscarp we followed; streams often presented themselves for crossing, which we had to ford without getting our baggage too wet.

The desert was getting deeper and deeper; sometimes, however, a human shadow seemed to flee into the distance; if the twists and turns of the road unexpectedly brought us closer to one of these specters, I felt a sudden disgust at the sight of a swollen head, with shiny skin,

devoid of hair, and repulsive wounds betrayed by the tears of miserable rags.

The unfortunate creature did not come to extend its deformed hand; on the contrary, it ran away, but not so fast that Hans would have greeted it with the usual "saellvertu".

—"Spetelsk," he said.

"A leper!" my uncle kept repeating.

And that word alone produced its repellent effect. This horrible affliction of leprosy is quite common in Iceland; it is not contagious, but hereditary; therefore, marriage is forbidden to these wretches.

These sights did little to brighten the landscape, which was becoming profoundly bleak; the last tufts of grass withered beneath our feet. Not a tree, save for a few clumps of dwarf birch resembling scrub. Not an animal, except for a few horses, the kind their masters couldn't feed, wandering the desolate plains. Sometimes a falcon soared through the gray clouds and flew swiftly toward the southern lands; I succumbed to the melancholy of this wild landscape, and my memories carried me back to my homeland.

We soon had to cross several small, insignificant fjords, and finally a real gulf; the tide, slack then, allowed us to pass without waiting and reach the hamlet of Alftanes, located a mile beyond.

In the evening, after fording two rivers rich in trout and pike, the Alfa and the Heta, we were forced to spend the night in an abandoned hovel, worthy of being haunted by all the goblins of Scandinavian mythology; surely the spirit of the cold had taken up residence there, and he made his presence felt throughout the night.

The following day presented no particular incident. The same marshy ground, the same uniformity, the same dreary appearance. By evening, we had covered half the distance and were sleeping at the Krösolbt annex.

On June 19th, for about a mile, a lava field stretched beneath our feet; this type of ground is called "hraun" in the region; the lava, rippled on

the surface, took on the shapes of cables, sometimes elongated, sometimes coiled upon themselves; an immense flow descended from the nearby mountains, volcanoes now extinct, but whose past violence these remnants attested to. However, a few wisps of steam from hot springs crept here and there.

We lacked the time to observe these phenomena; we had to walk; soon the marshy ground reappeared beneath our mounts' hooves; small lakes dotted it. Our direction was now west; we had indeed rounded the great bay of Faxe, and the twin white peaks of Snæfells rose in the clouds less than five miles away.

The horses were walking well; the difficulties of the ground did not stop them; for my part, I was beginning to get very tired; my uncle remained firm and upright as on the first day; I could not help but admire him as much as the hunter, who regarded this expedition as a simple stroll.

On Saturday, June 20th, at six o'clock in the evening, we reached Búdir, a small town on the coast, and the guide was demanding his agreed-upon payment. My uncle settled it with him. It was Hans's own family—that is, his uncles and first cousins—who offered us hospitality; we were warmly received, and without taking advantage of the kindness of these good people, I would gladly have rested with them after the fatigues of the journey. But my uncle, who had nothing to rest after, didn't see it that way, and the next day we had to mount our trusty animals again.

The ground felt the presence of the mountain, whose granite roots emerged from the earth like those of an old oak. We skirted the immense base of the volcano. The professor never took his eyes off it; he gestured, as if challenging it and saying, "So this is the giant I'm going to tame!" Finally, after twenty-four hours of walking, the horses stopped of their own accord at the door of the Stapi rectory.

XIV

Stapi is a small village made up of about thirty huts, built right in the lava under the sun's rays reflected by the volcano. It stretches out at the bottom of a small fjord nestled within a wall of the most unusual kind.

We know that basalt is a brown rock of igneous origin; it takes on regular forms that surprise us with their arrangement. Here, nature proceeds geometrically and works in a human manner, as if it had wielded the square, compass, and plumb line. If everywhere else it creates art with its great masses thrown without order, its barely sketched cones, its imperfect pyramids, with the bizarre succession of its lines, here, wishing to set an example of regularity, and preceding the architects of the earliest ages, it has created a rigorous order, which neither the splendors of Babylon nor the marvels of Greece have ever surpassed.

I had heard of the Giant's Causeway in Ireland, and of Fingal's Cave in one of the Hebrides, but the sight of a basaltic substructure had not yet been presented to my eyes.

However, in Stapi, this phenomenon appeared in all its beauty.

The fjord wall, like the entire coastline of the peninsula, consisted of a series of vertical columns, thirty feet high. These straight shafts, of perfect proportion, supported an archivolt made of horizontal columns whose overhang formed a semi-vault above the sea. At certain intervals, beneath this natural impluvium, the eye glimpsed pointed arches of admirable design, through which the open sea waves rushed in, foaming. A few fragments of basalt, torn away by the fury of the ocean, lay on the ground like the remains of an ancient temple, eternally young ruins, over which the centuries passed without diminishing them.

This was the last stage of our earthly journey. Hans had led us there intelligently, and I was somewhat reassured by the thought that he

would still be accompanying us.

Arriving at the door of the rector's house, a simple low hut, no more beautiful or comfortable than its neighbors, I saw a man shoeing a horse, hammer in hand, and leather apron around his waist.

"Saelvertu," the hunter told him.

—"God dag," replied the blacksmith in perfect Danish.

—"Kyrkoherde," said Hans, turning back to my uncle.

"The rector!" he repeated. "It seems, Axel, that this good man is the rector."

Meanwhile, the guide was informing the "kyrkoherde" of the situation; the latter, pausing his work, uttered a sort of cry, no doubt used between horses and horse dealers, and immediately a large shrew emerged from the hut. If she wasn't six feet tall, she was very close.

I feared that she would come to offer the travelers the Icelandic kiss; but nothing of the sort happened, and she even showed rather little grace in introducing us into her house.

The guest room seemed to me the worst in the rectory, cramped, dirty, and filthy. We had to make do; the rector didn't seem to practice the old-fashioned hospitality. Far from it. Before the day was out, I realized we were dealing with a blacksmith, a fisherman, a hunter, a carpenter, and certainly not a minister of the Lord. It was a weekday, admittedly. Perhaps he made up for it on Sundays.

I don't mean to speak ill of these poor priests who, after all, are quite wretched; they receive a ridiculous salary from the Danish government and collect a quarter of their parish tithe, which doesn't amount to sixty current marks^[1]. Hence the necessity of working to live; but by fishing, hunting, and shoeing horses, one ends up adopting the manners, tone, and customs of hunters, fishermen, and other somewhat rough people; that very evening I realized that our host did not count sobriety among his virtues.

[1] Hamburg coin, approximately 30 francs.

My uncle quickly realized what kind of man he was dealing with; instead of a brave and worthy scholar, he found a boorish and uncouth peasant. He therefore resolved to begin his great expedition as soon as possible and leave this inhospitable parish. He paid no heed to his fatigue and decided to spend a few days in the mountains.

The departure preparations were therefore made the day after our arrival in Stapi. Hans hired three Icelanders to replace the horses in transporting the luggage; but, once we reached the bottom of the crater, these natives were to turn back and leave us to our own devices. This point was firmly agreed upon.

On this occasion, my uncle had to inform the hunter that his intention was to continue the reconnaissance of the volcano to its furthest limits.

Hans simply inclined his head. Going there or elsewhere, delving into the heart of his island or traversing it, he saw no difference; as for me, distracted until then by the incidents of the journey, I had somewhat forgotten the future, but now I felt the emotion gripping me again with renewed force. What could I do? If I had been able to resist Professor Lidenbrock, it would have been in Hamburg, not at the foot of Snæfells.

One idea, above all others, troubled me greatly, a frightening idea designed to shake nerves less sensitive than mine.

“Let’s see,” I said to myself, “we’ll climb Snæfells. Fine. We’ll visit its crater. Good. Others have done it and survived. But that’s not all. If a path opens up to descend into the bowels of the earth, if that unfortunate Saknussem spoke the truth, we’ll get lost in the volcano’s underground galleries. Now, what proves that Snæfells is extinct? What proves that an eruption isn’t brewing? Does it follow that the monster has been asleep since 1229 that it can’t awaken? And if it does awaken, what will become of us?”

It required some thought, and I was thinking about it. I couldn't sleep without dreaming of an eruption; but the role of slag seemed rather brutal to play.

Finally I could no longer bear it; I resolved to submit the case to my uncle as skillfully as possible, and in the form of a perfectly unrealizable

hypothesis.

I went to find him. I shared my fears with him, and I stepped back to let him vent at his leisure.

"I was thinking about it," he replied simply.

What did those words mean? Was he finally going to listen to reason? Was he thinking of putting his plans on hold? It would have been too good to be true.

After a few moments of silence, during which I didn't dare question him, he resumed, saying:

"I was thinking about it. Since our arrival in Stapi, I have been concerned about the serious question you have just submitted to me, because we must not act recklessly.

"No," I replied forcefully.

"Sneffels has been silent for six hundred years; but it can speak. Now, eruptions are always preceded by perfectly known phenomena; so I questioned the inhabitants of the country, I studied the soil, and I can tell you, Axel, there will be no eruption."

At this statement I remained stunned, and I could not reply.

"You doubt my words?" said my uncle. "Well then, follow me."

I obeyed mechanically. Leaving the presbytery, the professor took a direct path which, through an opening in the basalt wall, led away from the sea. Soon we were in open country, if one can call such an immense accumulation of volcanic debris by that name; the land seemed crushed under a rain of enormous stones, of trapp, basalt, granite, and all kinds of pyroxene rocks.

I saw fumaroles rising into the air here and there; these white vapors, called "reykir" in Icelandic, came from the thermal springs, and their intensity indicated the volcanic activity of the ground. This seemed to justify my fears. So I was quite taken aback when my uncle said to me:

"You see all this smoke, Axel; well, it proves that we have nothing to fear from the fury of the volcano!"

"For example!" I exclaimed.

"Remember this well," the professor continued: "As an eruption approaches, these fumaroles intensify their activity before disappearing completely during the event. This is because the elastic fluids, no longer possessing the necessary tension, find their way into the craters instead of escaping through fissures in the Earth. Therefore, if these vapors remain in their usual state, if their energy does not increase, and if you add to this observation that the wind and rain are not replaced by heavy, still air, you can assert that there will be no eruption in the near future."

-But...

"Enough. When science has spoken, there's nothing left to do but remain silent."

I returned to the rectory with my head down; my uncle had beaten me with scientific arguments. However, I still had one hope: that once we reached the bottom of the crater, it would be impossible, for lack of a tunnel, to descend any deeper, despite all the Saknussemms in the world.

I spent the following night in a nightmare in the middle of a volcano and the depths of the earth, I felt myself launched into planetary spaces in the form of eruptive rock.

The next day, June 23rd, Hans was waiting for us with his companions, carrying provisions, tools, and equipment. Two iron-tipped walking sticks, two rifles, and two cartridge pouches were reserved for my uncle and me. Hans, ever the prudent man, had added a full wineskin to our luggage, which, along with our canteens, would provide us with water for eight days.

It was nine o'clock in the morning. The rector and his shrewish wife were waiting at their door. They undoubtedly wanted to bid us the final farewell of a host to a traveler. But this farewell took the unexpected

form of a formidable bill, where even the air in the rectory was appalling—foul, I dare say. This respectable couple was extorting us like a Swiss innkeeper and charging a hefty price for their exorbitant hospitality.

My uncle paid without haggling. A man who was leaving for the center of the earth didn't mind a few extra charges.

With that point settled, Hans gave the signal to leave, and a few moments later we had left Stapi.

XV

Snæfells is five thousand feet high; its double cone marks the end of a trachytic band that detaches itself from the island's orographic system. From our starting point, its two peaks could not be seen silhouetted against the grayish sky. I could only glimpse an enormous snow cap lowered over the giant's brow.

We walked in single file, preceded by the hunter; he was going up narrow paths where two people could not have walked side by side. Any conversation therefore became almost impossible.

Beyond the basalt wall of the Stapi fjord, there first appeared a soil of herbaceous and fibrous peat, a residue of the ancient vegetation of the marshes of the peninsula; the mass of this still unexploited fuel would be enough to heat the entire population of Iceland for a century; this vast peat bog, measured from the bottom of certain ravines, was often seventy feet high and presented successive layers of carbonized debris, separated by sheets of pumice tuff.

As a true nephew of Professor Lidenbrock, and despite my preoccupations, I observed with interest the mineralogical curiosities displayed in this vast natural history cabinet; at the same time, I was rewriting in my mind the entire geological history of Iceland.

This curious island clearly emerged from the seabed in relatively recent times; perhaps it is even still rising imperceptibly. If so, its origin can only be attributed to the action of subterranean fires. Therefore, in that case, Humphry Davy's theory, Saknussemm's document, my uncle's claims—all went up in smoke. This hypothesis led me to carefully examine the nature of the soil, and I soon grasped the sequence of phenomena that presided over the island's formation.

Iceland, entirely devoid of sedimentary terrain, consists solely of volcanic tuff, that is, an agglomeration of stones and rocks with a

porous texture. Before the existence of volcanoes, it was a trapezoidal mass, slowly raised above the waves by the thrust of central forces. The internal fires had not yet erupted outward.

But later, a wide fissure opened diagonally from the southwest to the northwest of the island, through which all the trachytic material gradually flowed out. The phenomenon then occurred without violence; the outflow was enormous, and the molten material, expelled from the Earth's interior, spread calmly in vast sheets or undulating masses. It was at this time that feldspars, syenites, and porphyries appeared.

But, thanks to this outpouring, the island's thickness increased considerably, and consequently, so did its resistance. One can imagine the quantity of elastic fluids that accumulated within it when, after the trachytic crust had cooled, it offered no further escape. A moment came when the mechanical power of these gases became so great that they lifted the heavy crust and carved out tall vents. From this arose the volcano formed by the uplift of the crust, and then the crater suddenly breached at the summit.

Then, volcanic phenomena followed the eruptive phenomena; through the newly formed openings, basaltic ejecta first escaped, of which the plain we were crossing at that moment offered our eyes the most marvelous examples. We walked on these heavy, dark gray rocks, which cooling had molded into hexagonal prisms. In the distance, a great number of flattened cones could be seen, which had once been so many fire-producing vents.

Then, the basaltic eruption exhausted, the volcano, whose strength increased from that of the extinct craters, gave passage to the lavas and to those tuffs of ash and scoria whose long flows I could see scattered on its flanks like an opulent head of hair.

Such was the succession of phenomena that constituted Iceland; all originated from the action of internal fires, and to suppose that the internal mass did not remain in a permanent state of incandescent liquid was madness. Madness above all to claim to reach the center of the globe!

I was therefore reassuring myself about the outcome of our undertaking, while marching towards the Sneffels.

The road was becoming increasingly difficult; the ground was rising; fragments of rock were shifting, and the most scrupulous attention was needed to avoid dangerous falls.

Hans advanced calmly as if on level ground; sometimes he disappeared behind the large boulders, and we lost sight of him momentarily; then a sharp whistle from his lips indicated the direction to follow. Often, too, he stopped, gathered a few fragments of rock, arranged them in a recognizable way, and thus formed markers to indicate the return route. A good precaution in itself, but one that future events rendered unnecessary.

Three tiring hours of walking had only brought us to the base of the mountain. There, Hans signaled us to stop, and a simple lunch was shared by all. My uncle ate double portions to speed things up. However, since this rest stop was also a place to rest, he had to wait for the guide's approval, who gave the signal to leave an hour later. The three Icelanders, as taciturn as their hunter companion, didn't utter a single word and ate simply.

We were now beginning to climb the slopes of Sneffels; its snowy summit, by an optical illusion common in the mountains, seemed very close to me, and yet, what long hours it would take to reach it! What fatigue above all! The stones, which no earth cement, no grass bound together, crumbled under our feet and were lost in the plain with the speed of an avalanche.

In some places, the mountain's slopes formed an angle of at least thirty-six degrees with the horizon; it was impossible to climb them, and these steep, stony inclines had to be navigated with considerable difficulty. We then helped each other with our walking sticks.

I must say that my uncle stayed as close to me as possible; he never lost sight of me, and on many occasions, his arm provided me with solid support. For his part, he undoubtedly had an innate sense of balance, for he never wavered. The Icelanders, though heavily laden, climbed with the agility of mountaineers.

Seeing the height of Snæfells' summit, it seemed impossible to reach it from that side unless the slopes were at a very steep angle. Fortunately, after an hour of exertion and feats of strength, amidst the vast blanket of snow covering the volcano's ridge, a kind of staircase unexpectedly appeared, simplifying our ascent. It was formed by one of those torrents of rock ejected by eruptions, known in Icelandic as "stiná." Had this torrent not been stopped in its fall by the mountain's slopes, it would have plunged into the sea and formed new islands.

As it was, so it served us well; the steepness of the slopes increased, but these stone steps allowed them to be climbed easily, and so quickly even, that having stayed behind for a moment while my companions continued their ascent, I saw them already reduced, by distance, to a microscopic appearance.

At seven o'clock in the evening we had climbed the two thousand steps of the staircase, and we overlooked an extumescence of the mountain, a kind of base on which the actual cone of the crater rested.

The sea extended to a depth of 3,200 feet; we had passed the permanent snow line, which is quite low in Iceland due to the constant humidity of the climate. It was bitterly cold; the wind was blowing fiercely. I was exhausted. The professor could clearly see that my legs were giving out on me, and, despite his impatience, he decided to stop. He signaled to the hunter, who shook his head and said:

—"Ofvanför."

"It seems we need to go higher," said my uncle.

Then he asked Hans the reason for his answer.

—"Mistour," replied the guide.

—"Ja, mistour," repeated one of the Icelanders in a frightened tone.

"What does this word mean?" I asked anxiously.

"Look," said my uncle.

I looked down towards the plain; an immense column of pulverized pumice, sand, and dust rose up, swirling like a waterspout; the wind drove it back down onto the flank of Snæfells, to which we were clinging; this opaque curtain stretched before the sun cast a great shadow over the mountain. If this waterspout were to bend, it would inevitably encircle us in its eddies. This phenomenon, quite common when the wind blows from the glaciers, is called "mistour" in Icelandic.

"Hastigt, hastigt," cried our guide.

Without knowing Danish, I understood that we had to follow Hans as quickly as possible. He began to circle the crater cone, but at an angle, to make walking easier; soon, the waterspout crashed down on the mountain, which trembled at its impact; stones caught in the wind's swirling currents rained down as if in an eruption. Fortunately, we were on the opposite slope and safe from all danger; without the guide's precaution, our mangled bodies, reduced to dust, would have fallen far away like the product of some unknown meteor.

However, Hans did not deem it prudent to spend the night on the slopes of the cone. We continued our zigzag ascent; the remaining fifteen hundred feet took nearly five hours; the detours, diagonals, and steps measured at least three leagues. I was exhausted; I was succumbing to the cold and hunger. The air, somewhat thin, was insufficient for my lungs.

Finally, at eleven o'clock in the evening, in the complete darkness, the summit of Sneffels was reached, and, before going to take shelter inside the crater, I had time to glimpse "the midnight sun" at the lowest point of its career, projecting its pale rays onto the sleeping island at my feet.

XVI

Supper was quickly devoured, and the small group settled in as best they could. The bedding was hard, the shelter flimsy, and the situation extremely difficult, five thousand feet above sea level. However, my sleep was particularly peaceful that night, one of the best I had had in a long time. I didn't even dream.

The next day we awoke half-frozen to a very crisp breeze, bathed in the rays of a beautiful sun. I left my granite bed and went to enjoy the magnificent spectacle unfolding before my eyes.

I was standing on the summit of one of the two peaks of Snæfells, the southern one. From there, my view extended over most of the island; the optics, common to all high altitudes, raised the coastlines, while the central parts seemed to sink. It was as if one of Helbesmer's relief maps lay spread out beneath my feet; I could see deep valleys crisscrossing in every direction, precipices plunging like wells, lakes turning into ponds, rivers becoming streams. To my right, countless glaciers and numerous peaks followed one another, some of them plumed with wisps of smoke. The undulations of these endless mountains, which their layers of snow seemed to make foam, reminded me of the surface of a restless sea. If I turned westward, the ocean unfolded in its majestic expanse, like a continuation of those rolling peaks. Where the land ended and the waves began, my eye could barely distinguish.

I thus immersed myself in the prestigious ecstasy bestowed by the high peaks, and this time, without vertigo, for I was finally growing accustomed to these sublime contemplations. My dazzled gaze bathed in the transparent radiance of the sun's rays; I forgot who I was, where I was, to live the life of elves or sylphs, imaginary inhabitants of Norse mythology; I reveled in the voluptuousness of the heights, without a thought for the abysses into which my destiny would soon plunge me.

But I was brought back to reality by the arrival of the professor and Hans, who joined me at the summit of the peak.

My uncle, turning towards the west, indicated with his hand a light vapor, a mist, an appearance of land that dominated the line of the waves.

"Greenland," he said.

"Greenland?" I exclaimed.

"Yes; we're not thirty-five leagues away, and during the thaws, polar bears even reach Iceland, carried on the ice floes in the north. But that hardly matters. We're on the summit of Snæfells; here are two peaks, one to the south, the other to the north. Hans will tell us what the Icelanders call the one that's carrying us right now."

When the question was asked, the hunter replied: "Scartaris."

My uncle gave me a triumphant look. "To the crater!" he said.

The Snæfells crater resembled an inverted cone, its opening perhaps half a league in diameter. I estimated its depth at about two thousand feet. Imagine the state of such a vessel when it filled with thunder and flames! The bottom of the crater could not have been more than five hundred feet in circumference, so its relatively gentle slopes made it easy to reach its lower part. Involuntarily, I compared this crater to an enormous flared blunderbuss, and the comparison terrified me.

"To descend in a blunderbuss," I thought, "when it may be loaded and could detonate at the slightest shock, is the work of madmen."

But I didn't have to back down. Hans, with an indifferent air, resumed leading the group. I followed him without a word.

To facilitate the descent, Hans traced very elongated ellipses inside the cone; it was necessary to walk amidst the igneous rocks, some of which, shaken in their hollows, tumbled bouncing to the bottom of the abyss. Their fall created reverberating echoes of a strange sound.

Some parts of the cone formed internal glaciers; Hans advanced only with extreme caution, probing the ground with his iron-tipped staff to locate crevasses. At certain precarious passages, it became necessary to link us with a long rope, so that whoever unexpectedly lost their footing would be supported by their companions. This solidarity was prudent, but it did not eliminate all danger.

However, and despite the difficulties of the descent on slopes that the guide did not know, the route was made without accident, except for the fall of a bundle of ropes which escaped from the hands of an Iclander and went by the shortest route to the bottom of the abyss.

We arrived at noon. I raised my head and saw the upper opening of the cone, in which was framed a piece of sky of a singularly small, but almost perfect, circumference. Only at one point did the peak of Scartaris stand out, plunging into the immensity.

At the bottom of the crater, three vents opened, through which, during Snæfells' eruptions, the central furnace expelled its lava and vapors. Each of these vents was about a hundred feet in diameter. They lay gaping beneath our feet. I didn't have the strength to look inside. Professor Lidenbrock, however, had made a quick examination of their arrangement; he was panting; he ran from one to the other, gesturing wildly and uttering incomprehensible words. Hans and his companions, sitting on pieces of lava, watched him; they clearly thought he was mad.

Suddenly my uncle cried out; I thought he had lost his footing and fallen into one of the three chasms. But no. I saw him, arms outstretched, legs apart, standing before a granite boulder placed in the center of the crater, like an enormous pedestal made for the statue of Pluto. He was in the pose of a man in awe, but his amazement soon gave way to unbridled joy.

"Axel! Axel!" he cried, "come! come!"

I ran over. Neither Hans nor the Icelanders moved.

"Look," the professor told me.

And, sharing his astonishment, if not his joy, I read on the western face of the block, in runic characters half-eaten away by time, this name cursed a thousand times:

1 Ǫ ǫ ǫ * 1 ƿ ǫ Ɔ * * † ʝ

"Arne Saknussem!" cried my uncle, "will you still doubt?"

I didn't reply, and I returned, dismayed, to my lava bench. The evidence overwhelmed me.

How long I remained lost in thought, I don't know. All I know is that when I looked up, I saw my uncle and Hans alone at the bottom of the crater. The Icelanders had been dismissed, and now they were descending the outer slopes of Snæfells to return to Stapi.

Hans slept peacefully at the foot of a rock, in a lava flow where he had made himself an improvised bed; my uncle tossed and turned at the bottom of the crater, like a wild animal in a trapper's pit. I had neither the desire nor the strength to get up, and, following the guide's example, I let myself drift into a painful slumber, imagining I heard noises or felt shivers in the mountain's flanks.

And so passed that first night at the bottom of the crater.

The next day, a grey, cloudy, heavy sky descended over the summit of the cone. I didn't notice it so much because of the darkness of the chasm as because of the anger that seized my uncle.

I understood the reason, and a glimmer of hope returned to my heart. Here's why.

Of the three paths opened beneath our feet, only one had been followed by Saknussem. According to the Icelandic scholar, it could be recognized by this peculiarity noted in the cryptogram, that the shadow of the Scartaris came to caress its edges during the last days of June.

Indeed, this sharp peak could be considered as the style of an immense sundial, whose shadow on a given day marked the path to the center of the globe.

However, if the sun were to fail to appear, there would be no shadow. Consequently, no indication would be given. It was June 25th. If the sky were to remain overcast for six days, the observation would have to be postponed to another year.

I give up trying to paint Professor Lidenbrock's impotent rage. The day passed, and no shadows lengthened on the crater's rim. Hans didn't move from his spot; he must have been wondering what we were waiting for, if he was wondering anything at all! My uncle didn't speak to me once. His gaze, invariably fixed on the sky, was lost in its gray, misty hue.

On the 26th, still nothing; rain mixed with snow fell all day. Hans built a hut with pieces of lava. I took a certain pleasure in following with my eyes the thousands of impromptu waterfalls on the sides of the cone, each stone increasing the deafening murmur.

My uncle could no longer contain himself. It was enough to irritate a more patient man, for it was truly a failure in port.

But to great sorrows heaven incessantly mixes great joys, and it reserved for Professor Lidenbrock a satisfaction equal to his despairing troubles.

The next day the sky was still overcast, but on Sunday, June 28th, the third-to-last day of the month, with the changing moon came a change in the weather. The sun poured its rays in torrents into the crater. Every mound, every rock, every stone, every roughness received its benevolent emanation and instantly cast its shadow upon the ground. Among them all, the shadow of Scartaris stood out like a sharp edge and began to turn imperceptibly toward the radiant orb.

My uncle was filming with her.

At noon, during its shortest period, it came to gently lick the edge of the central chimney.

"It's there!" cried the professor, "it's there! At the center of the globe!" he added in Danish.

I looked at Hans.

"Forüt!" said the guide calmly.

"Forward!" replied my uncle.

It was one o'clock and thirteen minutes in the evening.

XVII

The real journey was beginning. Until then, fatigue had prevailed over difficulties; now these would truly arise beneath our feet.

I had not yet plunged my gaze into that unfathomable well into which I was about to plunge. The moment had come. I could still either resign myself to the undertaking or refuse to attempt it. But I was ashamed to back down before the hunter. Hans accepted the adventure so calmly, with such indifference, such perfect disregard for all danger, that I blushed at the thought of being less brave than he. Alone, I would have launched into a series of grand arguments; but, in the guide's presence, I remained silent; one of my memories flew to my lovely Virlandaise, and I approached the central chimney.

I said it was a hundred feet in diameter, or three hundred feet around. I leaned over an overhanging rock and looked down; my hair stood on end. A feeling of emptiness seized me. I felt my center of gravity shift and vertigo rise to my head like a kind of intoxication. Nothing is more intoxicating than this pull of the abyss. I was about to fall. A hand caught me. Hans's. Clearly, I hadn't had enough lessons in falling into a chasms at Copenhagen's Frelasers-Kirk.

However, even though I had only briefly ventured a glance into the well, I had become aware of its shape. Its walls, almost sheer, nevertheless presented numerous projections that should have facilitated the descent; but while the staircase was present, the handrail was lacking. A rope tied to the opening would have sufficed to support us, but how could we detach it once we reached its bottom?

My uncle used a very simple method to overcome this difficulty. He uncoiled a rope about the thickness of a thumb and four hundred feet long; he let half of it out first, then wound it around a protruding block of lava and threw the other half back down the chimney. Each of us could then descend by holding the two halves of the rope together in

our hand, so that it wouldn't unravel; once we had descended two hundred feet, nothing would be easier than to pull it back up by letting go of one end and pulling on the other. Then, we would repeat this exercise *ad infinitum* .

"Now," said my uncle after completing these preparations, "let's take care of the luggage; it will be divided into three packages, and each of us will attach one to our back; I only mean fragile items."

The audacious professor obviously did not include us in this last category.

"Hans," he continued, "will take charge of the tools and part of the provisions; you, Axel, of a second third of the provisions and the weapons; I, of the rest of the provisions and the delicate instruments.

—But, I said, what about the clothes, and this mass of ropes and ladders, who will take care of bringing them down?

—They will come down by themselves.

"How so?" I asked, quite astonished.

"You'll see."

My uncle readily used drastic measures and without hesitation. On his orders, Hans gathered the non-fragile items into a single package, and this tightly bound bundle was simply thrown into the chasm.

I heard that loud roar produced by the movement of the layers of air. My uncle, leaning over the abyss, watched with a satisfied eye the descent of his luggage, and only stood up after losing sight of it.

"Okay," he said. "Now it's our turn."

I ask any man of good faith if it was possible to hear such words without shuddering!

The professor strapped the bundle of instruments to his back; Hans took the tool bundle, and I took the weapons. The descent began in the

following order: Hans, my uncle, and I. It took place in profound silence, broken only by the sound of rock fragments tumbling into the abyss.

I let myself drift, so to speak, frantically gripping the double rope with one hand, bracing myself with my iron-tipped staff in the other. A single thought dominated my mind: I feared the foothold would give way. The rope seemed far too fragile to support the weight of three people. I used it as little as possible, performing miracles of balance on the lava outcrops that my foot tried to grasp like a hand.

When one of those slippery steps happened to wobble under Hans's footstep, he would say in his calm voice:

—"Gif akt!"

"Watch out!" my uncle kept repeating.

After half an hour, we had reached the surface of a rock deeply embedded in the chimney wall.

Hans pulled the rope by one of its ends; the other rose into the air; after passing the upper rock, it fell back down scraping pieces of stone and lava, a kind of rain, or rather, very dangerous hail.

As I leaned over our narrow platform, I noticed that the bottom of the hole was still invisible.

The rope maneuver began again, and half an hour later we had reached a new depth of two hundred feet.

I don't know if the most ardent geologist would have tried to study the nature of the surrounding terrain during this descent. For my part, I wasn't particularly concerned; whether they were Pliocene, Miocene, Eocene, Cretaceous, Jurassic, Triassic, Permian, Carboniferous, Devonian, Silurian, or primitive, it mattered little to me. But the professor, no doubt, made his observations or took notes, for at one of the stops, he said to me:

"The more I go, the more confident I become; the arrangement of these volcanic terrains absolutely supports Davy's theory. We are in the primeval soil, soil in which the chemical reaction of metals ignited in

contact with air and water took place; I absolutely reject the system of a central heat source; besides, we shall see."

The same conclusion as always. It's clear I wasn't interested in arguing. My silence was taken as agreement, and the descent began again.

After three hours, I still couldn't see the bottom of the chimney. When I raised my head, I could see its opening gradually decreasing in size; its walls, due to their slight inclination, tended to come together, and darkness gradually fell.

However, we were still descending; it seemed to me that the stones detached from the walls were being swallowed up with a duller reverberation and that they must soon meet the bottom of the abyss.

Since I had taken care to note down our rope maneuvers exactly, I was able to accurately calculate the depth reached and the time elapsed.

We had then repeated this maneuver fourteen times, which lasted half an hour. So that was seven hours, plus fourteen quarter-hour breaks, or three and a half hours. In all, ten and a half hours. We had left at one o'clock; it must have been eleven o'clock by now.

As for the depth we had reached, these fourteen maneuvers of a two-hundred-foot rope yielded two thousand eight hundred feet.

At that moment, Hans' voice could be heard:

—"Halt!" he said.

I stopped short just as I was about to hit my uncle's head with my feet.

"We have arrived," he said.

"Where?" I asked, sliding down next to him.

—"At the bottom of the perpendicular chimney.

—"So there is no other way out?

"Yes, a sort of corridor I can just make out, slanting to the right. We'll see about that tomorrow. Let's have supper first and then we'll sleep."

The darkness was not yet complete. We opened the bag of provisions, ate, and lay down as best we could on a bed of stones and lava debris.

And when, lying on my back, I opened my eyes, I saw a bright point at the end of this three-thousand-foot-long tube, which was transforming into a gigantic telescope.

It was a star devoid of any scintillation and which, according to my calculations, should be sigma of the little Bear.

Then I fell into a deep sleep.

XVIII

At eight o'clock in the morning, a ray of daylight came to wake us. The thousand facets of lava on the walls collected it as it passed and scattered it like a shower of sparks.

This glow was strong enough to allow surrounding objects to be distinguished.

"Well, Axel, what do you say?" said my uncle, rubbing his hands together. "Have you ever spent a more peaceful night in our house on Königstrasse? No more noise from carts, no more shouts from merchants, no more yells from boatmen!"

—No doubt, we are very peaceful at the bottom of this well; but this very calm has something frightening about it.

"Come now," cried my uncle, "if you're already frightened, what will it be like later? We haven't even penetrated an inch into the bowels of the earth yet?"

-What do you mean?

—I mean, we've only reached the ground of the island! This long vertical tube, which leads to the Sneffels crater, stops almost at sea level.

—Are you sure about that?

"Absolutely; check the barometer, you'll see!"

Indeed, the mercury, after gradually rising in the instrument as we descended, had stopped at twenty-nine inches.

"As you can see," the professor continued, "we only have a pressure of one atmosphere so far, and I'm eager for the manometer to replace this

barometer."

This instrument would, in fact, become useless to us, as soon as the weight of the air exceeded its calculated pressure at ocean level.

"But," I said, "is there not reason to fear that this ever-increasing pressure will be very distressing?"

"No. We'll descend slowly, and our lungs will adjust to breathing a more compressed atmosphere. Aeronauts eventually run out of air as they ascend into the upper layers; we might have too much. But I prefer that. Let's not waste a moment. Where's the package that went ahead of us into the mountain?"

I then remembered that we had searched for him in vain the previous evening. My uncle questioned Hans, who, after looking carefully with his hunter's eyes, replied:

"The hoopoe!"

"Up there."

Indeed, the package was hanging from a rocky outcrop, about a hundred feet above our heads. The agile Iclander immediately climbed like a cat and, in a few minutes, the package was down to us.

"Now," said my uncle, "let's have lunch; but let's have lunch like people who may have a long race to run."

The biscuit and the dried meat were washed down with a few sips of water mixed with juniper.

After lunch, my uncle took a notebook for observations from his pocket; he successively took out his various instruments and noted the following data:

Monday, July 1st.

Stopwatch: 8:17 a.m.

Barometer: 29.7°F.

Thermometer: 6°.

Direction: ESE.

This last observation applied to the dark gallery and was given by the compass.

"Now, Axel," cried the professor enthusiastically, "we are truly going to delve into the bowels of the globe. This is the precise moment when our journey begins."

That said, my uncle took Ruhmkorff's apparatus suspended from his neck in one hand; with the other, he connected the electric current to the coil of the lantern, and a fairly bright light dispelled the darkness of the gallery.

Hans carried the second device, which was also put into operation. This ingenious application of electricity allowed us to travel for a long time by creating artificial light, even amidst the most flammable gases.

"Let's go!" said my uncle.

Each one took back his bundle. Hans took charge of pushing the bundle of ropes and clothes in front of him, and I, third, entered the gallery.

As I plunged into that dark corridor, I raised my head, and I glimpsed one last time, through the field of the immense tube, that Icelandic sky "which I was never to see again."

During the last eruption in 1229, the lava had forced its way through this tunnel. It coated the interior with a thick, shiny layer; electric light reflected off it, multiplying its intensity a hundredfold.

The whole difficulty of the route consisted of not slipping too quickly on a slope inclined at about forty-five degrees; fortunately, some erosions, some blisters, served as steps, and we only had to go down by letting our luggage, held by a long rope, slide down.

But what formed a path beneath our feet became stalactites on the other walls; the lava, porous in places, displayed small, rounded blisters; opaque quartz crystals, adorned with limpid drops of glass and suspended from the vault like chandeliers, seemed to light up as we

passed. It was as if the spirits of the abyss were illuminating their palace to receive the guests of the earth.

"It's magnificent!" I exclaimed involuntarily. "What a sight, Uncle! Do you admire these shades of lava that range from reddish-brown to brilliant yellow through imperceptible gradations? And these crystals that appear to us like luminous globes?"

"Ah! You're coming, Axel!" replied my uncle. "Ah! You find this splendid, my boy! You'll see many more, I hope. Let's go! Let's go!"

He would have said more accurately, "let's glide," for we were sliding effortlessly down the sloping hillsides. It was Virgil's "*facilis descensus Avernus*." The compass, which I consulted frequently, pointed southeast with unwavering precision. This lava flow veered neither to one side nor the other. It possessed the inflexibility of a straight line.

However, the temperature didn't increase noticeably; this seemed to confirm Davy's theories, and more than once I consulted the thermometer in astonishment. Two hours after departure, it still only read 10°C, that is to say, an increase of 4°C. This led me to believe that our descent was more horizontal than vertical. As for knowing the exact depth reached, nothing could be easier. The professor precisely measured the angles of deviation and inclination of the route, but he kept the results of his observations to himself.

In the evening, around eight o'clock, he gave the signal to stop. Hans immediately sat down; the lamps were hung from a lava outcrop. We were in a kind of cavern where there was no shortage of air. On the contrary. Some breezes reached us. What caused them? To what atmospheric disturbance could we attribute their origin? It was a question I didn't try to answer at that moment; hunger and fatigue rendered me incapable of reasoning. A descent of seven consecutive hours is not accomplished without a great expenditure of strength. I was exhausted. The word "halt" was therefore a welcome relief. Hans spread some provisions on a block of lava, and everyone ate with gusto. However, one thing worried me: our water supply was half depleted. My uncle intended to replenish it at the underground springs, but so far

these had completely run dry. I couldn't help but draw his attention to this matter.

"Does this lack of sources surprise you?" he said.

—No doubt, and it even worries me; we only have enough water for five days.

—Don't worry, Axel, I assure you we will find water, and more than we could ever want.

—When was that?

—When we leave this lava envelope, how do you expect springs to gush forth through these walls?

—But perhaps this flow extends to great depths? It seems to me that we haven't yet made much vertical progress?

—What makes you think that?

—That's because if we were very far inside the Earth's crust, the heat would be stronger.

—According to your system, replied my uncle; and what does the thermometer indicate?

—Fifteen degrees barely, which is only an increase of nine degrees since our departure.

—Well, conclude.

—Here is my conclusion. According to the most accurate observations, the temperature increase within the Earth is one degree per 100 feet. However, certain local conditions can modify this figure. For example, at Yakust in Siberia, it has been observed that the increase of one degree occurs per 36 feet; this obviously depends on the conductivity of the rocks. I would also add that, in the vicinity of an extinct volcano, and through gneiss, it has been observed that the temperature rise is only one degree per 125 feet. Let us therefore take this last hypothesis, which is the most favorable, and calculate.

—Calculate, my boy.

"Nothing could be easier," I said, arranging the figures in my notebook. "Nine times one hundred and twenty-five feet gives eleven hundred and twenty-five feet of depth."

—Nothing could be more accurate.

-Well?

—Well, according to my observations, we arrived at ten thousand feet below sea level.

-Is it possible?

—Yes, or the numbers are no longer numbers!

The professor's calculations were correct; we had already exceeded by six thousand feet the greatest depths reached by man, such as the mines of Kitz-Bahl in Tyrol, and those of Wutemberg in Bohemia.

The temperature, which should have been eighty-one degrees in that place, was barely fifteen. It gave one pause for thought.

XIX

The following day, Tuesday, June 30, at six o'clock, the descent was resumed.

We continued along the lava gallery, a veritable natural ramp, as gentle as those sloping surfaces that still replace stairs in old houses. This continued until 12:17, the precise moment when we rejoined Hans, who had just stopped.

"Ah!" cried my uncle, "we have reached the end of the chimney."

I looked around me; we were at the center of a crossroads, where two roads converged, both dark and narrow. Which one should we take? Therein lay a difficulty.

However, my uncle did not want to appear to hesitate either in front of me or the guide; he pointed to the eastern tunnel, and soon the three of us were inside it.

Moreover, any hesitation in the face of this double path would have continued indefinitely, because no clue could determine the choice of one or the other; it was necessary to rely entirely on chance.

The slope of this new gallery was barely perceptible, and its cross-section quite uneven; at times a succession of arches unfolded before us like the aisles of a Gothic cathedral; medieval artists could have studied there all the forms of that religious architecture which has the pointed arch as its originator. A mile further on, our heads bowed beneath the low arches of the Romanesque style, and massive pillars embedded in the rock sagged under the weight of the vaults. In certain places, this arrangement gave way to low substructures that resembled the works of beavers, and we crept along through narrow passages.

The heat remained at a bearable level. Involuntarily, I thought about its intensity when the lava spewed from Snæfells rushed down this now

so tranquil passage. I imagined the torrents of fire shattering at the corners of the gallery and the accumulation of superheated vapors in this narrow space!

"Let's hope," I thought, "that the old volcano doesn't suddenly erupt in some late-night whim!"

I did not share these thoughts with Uncle Lidenbrock; he would not have understood them. His sole thought was to move forward. He walked, he slid, he even tumbled, with a conviction that, all things considered, was best admired.

At six o'clock in the evening, after a leisurely walk, we had gained two leagues in the south, but barely a quarter of a mile in depth.

My uncle gave the signal for rest. We ate without talking too much, and fell asleep without thinking too much.

Our arrangements for the night were quite simple: a traveling blanket, in which we wrapped ourselves, constituted our entire bedding. We had neither cold nor unwelcome visitors to fear. Travelers who venture into the deserts of Africa, into the heart of the forests of the New World, are forced to watch over one another during their sleep; but here, absolute solitude and complete security. Savages or wild beasts, none of these malevolent races were to be feared.

We woke up the next day feeling refreshed and ready. We resumed our journey. We were following a lava path, just as we had the day before. It was impossible to discern the nature of the terrain it traversed. The tunnel, instead of plunging into the Earth's core, tended to become perfectly horizontal. I even thought I noticed it rising back towards the surface. This characteristic became so pronounced around ten o'clock in the morning, and consequently so tiring, that I was forced to slow our pace.

"Well, Axel?" said the professor impatiently.

"Well, I can't take it anymore," I replied.

—What! After three hours of walking on such an easy road!

—Easy, I'm not saying no, but tiring for sure.

—What! When all we have to do is get out!

—To be assembled, whether you like it or not!

"Get in!" said my uncle, shrugging his shoulders.

"No doubt. In the last half hour, the slopes have changed, and if we follow them like this, we will certainly return to Icelandic soil."

The professor shook his head like a man who didn't want to be convinced. I tried to resume the conversation. He didn't answer me and signaled us to leave. I could see that his silence was nothing but concentrated bad temper.

However, I bravely took up my burden again and quickly followed Hans, who was preceded by my uncle. I was determined not to fall behind; my greatest concern was not to lose sight of my companions. I shuddered at the thought of getting lost in the depths of that labyrinth.

Moreover, the uphill path was becoming more arduous, but I consoled myself by thinking that it was bringing me closer to the earth's surface. It was a glimmer of hope. Each step confirmed it.

At noon, a change in appearance occurred in the gallery walls. I noticed it from the weakening of the electric light reflected by the walls. The lava coating gave way to solid rock; the massif consisted of inclined layers, often arranged vertically. We were in the midst of a transitional period, in the heart of the Silurian period[1].

[1] So named because the lands of this period are very extensive in England, in the lands formerly inhabited by the Celtic tribe of the Silures.

"It's obvious," I exclaimed, "the sediments of the waters formed, in the second epoch of the earth, these schists, these limestones and these sandstones! We are turning our backs on the granite massif! We are like people from Hamburg, who would take the road from Hanover to go to Lübeck."

I should have kept my observations to myself. But my geologist's temperament prevailed over prudence, and Uncle Lidenbrock heard my exclamations.

"What's wrong with you?" he said.

—Look! I replied, showing him the varied succession of sandstones, limestones and the first signs of slate terrain.

-Well?

—Here we have arrived at the period during which the first plants and the first animals appeared!

—Ah! You think so?

"But look, examine, observe!"

I forced the professor to move his lamp along the gallery walls. I expected some exclamation from him. But, far from it, he didn't say a word, and continued on his way.

Had he understood me or not? Did he not want to admit, out of pride as an uncle and a scholar, that he had made a mistake in choosing the eastern tunnel, or was he determined to recognize this passage to its end? It was obvious that we had left the lava route, and that this path could not lead to the heart of Sneffels.

However, I wondered if I was placing too much importance on this change in the terrain. Was I mistaken? Were we really passing through these layers of rock superimposed on the granite massif?

"If I'm right," I thought, "I must find some remnant of a primitive plant, and I'll have to face the facts. Let's look."

I hadn't gone a hundred paces when undeniable evidence presented itself to my eyes. This had to be true, for in Silurian times, the seas contained more than fifteen hundred species of plants and animals. My feet, accustomed to the hard lava soil, suddenly trod upon a dust made of plant debris and shells. On the walls, the imprints of wrack and clubmoss were clearly visible; Professor Lidenbrock could not have

been mistaken; but he closed his eyes, I imagine, and continued on his way with an unwavering stride.

It was stubbornness taken to extremes. I couldn't stand it any longer. I picked up a perfectly preserved shell, which had belonged to an animal roughly similar to the modern woodlouse; then I went back to my uncle and said to him:

"Look!"

"Well," he replied calmly, "it's the shell of a crustacean from the extinct order of trilobites. Nothing else."

—But don't you conclude from that?...

—What you yourself conclude? Yes. Absolutely. We have abandoned the granite layer and the lava route. It is possible that I was mistaken; but I will not be certain of my error until I reach the end of this gallery.

—You are right to act this way, my uncle, and I would strongly approve of you if we did not have to fear an increasingly threatening danger.

—And which one?

—The lack of water.

—Well then! We'll ration ourselves, Axel.

XX

Indeed, we had to ration our supplies. Our provisions could not last more than three days. This I realized that evening at suppertime. And, to our dismay, we had little hope of finding any fresh water in these lands of the transitional period.

Throughout the following day, the gallery unfurled its endless arches before our steps. We walked almost in silence. Hans's muteness was enveloping us.

The road did not rise, at least not noticeably; sometimes it even seemed to slope. But this tendency, slight as it was, was not to reassure the professor, because the nature of the layers did not change, and the transition period became more pronounced.

The electric light made the schist, limestone, and old red sandstone of the walls sparkle splendidly; one could have thought oneself in a trench dug in the middle of Devonshire, which gave its name to this type of terrain. Magnificent marble specimens covered the walls, some agate-grey with capriciously pronounced white veins, others crimson or yellow mottled with red patches; further on, samples of those dark-colored morello marbles, in which the limestone stood out in vivid shades.

Most of these marbles bore the imprints of primitive animals; but since the previous day, creation had made evident progress. Instead of rudimentary trilobites, I perceived remains of a more perfect order; among others, Ganoid fish and those Sauropteris in which the paleontologist's eye has been able to discern the earliest forms of the reptile. The Devonian seas were inhabited by a great number of animals of this kind, and they deposited them by the thousands on the newly formed rocks.

It was becoming clear that we were climbing back up the ladder of animal life, with man at the top. But Professor Lidenbrock didn't seem to notice.

He was waiting for two things: either a vertical shaft would open beneath his feet, allowing him to resume his descent; or an obstacle would prevent him from continuing down this path. But evening arrived without this hope being fulfilled.

On Friday, after a night during which I began to feel the torments of thirst, our little group plunged once again into the twists and turns of the gallery.

After ten hours of walking, I noticed that the glare from our lamps on the walls diminished considerably. The marble, schist, limestone, and sandstone of the walls gave way to a dark and dull surface. At a point where the tunnel became very narrow, I leaned against its wall.

When I withdrew my hand, it was completely black. I looked more closely. We were in the middle of a coal mine.

"A coal mine!" I exclaimed.

"A mine without miners," replied my uncle.

—Hey! Who knows?

"I know," replied the professor curtly, "and I am certain that this gallery bored through these coal seams was not made by human hands. But whether it is the work of nature or not matters little to me. Supper time has arrived. Let us eat."

Hans prepared some food. I barely ate and drank the few drops of water that made up my ration. The guide's half-full canteen was all that was left to quench the thirst of three men.

After their meal, my two companions lay down on their blankets and found in sleep a remedy for their fatigue. As for me, I could not sleep, and I counted the hours until morning.

On Saturday, at six o'clock, we set off again. Twenty minutes later, we arrived at a vast excavation; I then recognized that the hand of man could not have dug this coal mine; the vaults would have been braced, and truly they were held together only by a miracle of balance.

This cavern-like structure measured one hundred feet wide by one hundred and fifty feet high. The ground had been violently displaced by an underground upheaval. The earth's mass, yielding to some powerful force, had been dislodged, leaving this vast void into which inhabitants of the earth were entering for the first time.

The entire history of the coal mining period was written on these dark walls, and a geologist could easily follow its various phases. The coal seams were separated by layers of compact sandstone or clay, and seemed crushed by the overlying strata.

In this age of the world, which preceded the Mesozoic era, the earth was covered with immense vegetation due to the combined action of tropical heat and persistent humidity. An atmosphere of vapors enveloped the globe on all sides, still depriving it of the sun's rays.

From this stemmed the conclusion that the high temperatures did not originate from this new source; perhaps even the sun was not yet ready to play its brilliant role. "Climates" did not yet exist, and a scorching heat spread across the entire surface of the globe, equal in intensity from the Equator to the poles. Where did it come from? From the Earth's interior.

Despite Professor Lidenbrock's theories, a violent fire smoldered in the bowels of the spheroid; its action was felt down to the last layers of the earth's crust; the plants, deprived of the beneficial effluvia of the sun, gave neither flowers nor perfumes, but their roots drew strong life from the burning soils of the first days.

There were few trees, only herbaceous plants, immense lawns, ferns, clubmosses, sigillaria, asterophyllites, rare families whose species then numbered in the thousands.

But it is precisely to this exuberant vegetation that coal owes its origin. The Earth's elastic crust obeyed the movements of the liquid

mass it covered. From this arose numerous fissures and subsidences; the plants, carried underwater, gradually formed considerable masses.

Then came the action of natural chemistry; at the bottom of the seas, the plant masses first turned into peat; then, thanks to the influence of gases, and under the fire of fermentation, they underwent complete mineralization.

Thus were formed these immense layers of coal which the consumption of all peoples, for many centuries to come, will not be able to exhaust.

These thoughts came back to me as I considered the coal deposits accumulated in this part of the Earth's massif. These deposits, no doubt, will never be discovered. Exploiting these remote mines would require sacrifices that are too great. Besides, what would be the point, when coal is practically scattered across the surface of the earth in so many regions? Thus, just as I saw these untouched seams, so they would still be when the world's final hour struck.

However, we walked on, and alone among my companions, I forgot the length of the road, losing myself in geological observations. The temperature remained roughly the same as it had been during our passage through the lava and shale. Only, my sense of smell was affected by a very strong odor of hydrogen protocarbon. I immediately recognized, in this tunnel, the presence of a significant quantity of this dangerous fluid, which miners call firedamp, and whose explosion has so often caused terrible disasters.

Fortunately, we were illuminated by Ruhmkorff's ingenious devices. If, by misfortune, we had imprudently explored this gallery with a torch in hand, a terrible explosion would have ended the journey, wiping out the travelers.

This excursion into the coal mine lasted until evening. My uncle could barely contain his impatience with the flatness of the road. The darkness, always deep at twenty paces, made it impossible to judge the length of the tunnel, and I was beginning to think it endless, when suddenly, at six o'clock, a wall unexpectedly appeared before us. To the

right, to the left, above, below, there was no way out. We had reached the end of a dead end.

"Well, so much the better!" cried my uncle, "at least I know where I stand. We're not on the road to Saknussemm, and all that's left is to turn back. Let's get a night's rest, and in three days we'll have reached the point where the two tunnels fork."

—Yes, I said, if we have the strength!

—And why not?

—Because tomorrow, there will be a complete lack of water.

"And will courage be lacking too?" the professor asked, looking at me sternly.

I didn't dare answer him.

21st

The next day we set off very early in the morning. We had to hurry. We were five days' walk from the crossroads.

I will not dwell on the sufferings of our return. My uncle bore them with the anger of a man who does not feel himself to be the strongest; Hans with the resignation of his peaceful nature; I, I confess, complaining and despairing; I could not have a heart against this misfortune.

As I had foreseen, water ran completely out by the end of the first day's march; our liquid supply was then reduced to gin; but this infernal liquor burned my throat, and I couldn't even bear the sight of it. I found the temperature stifling; fatigue paralyzed me. More than once, I nearly collapsed. We would then halt; my uncle or the Iclander would comfort me as best they could. But I could already see that the former was struggling against the extreme fatigue and the torments caused by the lack of water.

Finally, on Tuesday, July 8th, dragging ourselves on our knees and hands, we arrived, half-dead, at the junction of the two galleries. There I remained like an inert mass, stretched out on the lava floor. It was ten o'clock in the morning.

Hans and my uncle, leaning against the wall, tried to nibble on some pieces of biscuit. Long moans escaped my swollen lips. I fell into a deep sleep.

After some time, my uncle approached me and lifted me up in his arms:

"Poor child!" he murmured with a genuine hint of pity.

I was touched by these words, unaccustomed as I was to the tenderness of the fierce professor. I took his trembling hands in mine.

He let me, looking at me. His eyes were moist.

I then saw him take the water bottle hanging at his side. To my great surprise, he brought it to my lips:

"Drink," he said.

Had I heard correctly? Was my uncle crazy? I stared at him blankly. I didn't want to understand.

"Wood," he resumed.

And raising his gourd, he emptied it entirely between my lips.

Oh! infinite pleasure! a sip of water came to moisten my burning mouth, just one, but it was enough to bring back to me the life that was slipping away.

I thanked my uncle by clasping my hands together.

"Yes," he said, "a sip of water! The last one! Do you hear? The last one! I had carefully kept it at the bottom of my flask. Twenty times, a hundred times, I had to resist my terrifying desire to drink it! But no, Axel, I was saving it for you."

—My uncle! I murmured, as large tears wet my eyes.

—Yes, poor child, I knew that when you arrived at this crossroads, you would fall half dead, and I saved my last drops of water to revive you.

"Thank you! Thank you!" I exclaimed.

Although my thirst was only slightly quenched, I had nevertheless regained some strength. The muscles of my throat, which had been tense until then, were relaxing; the inflammation of my lips had subsided. I could speak.

"Come now," I said, "we only have one course of action to take; we are running out of water; we must retrace our steps."

While I was speaking like this, my uncle avoided looking at me; he lowered his head; his eyes fled from mine.

"We must return," I cried, "and take the path back to Sneffels. May God give us the strength to climb back up to the summit of the crater!"

"Come back!" said my uncle, as if he were answering himself rather than me.

"Yes, come back, and without wasting a moment."

There was a rather long moment of silence.

"So, Axel," the professor continued in a strange tone, "those few drops of water didn't give you back your courage and energy?"

—Courage!

"I see you as dejected as before, and still uttering words of despair!"

What kind of man was I dealing with, and what projects was his audacious mind still forming?

"What, you don't want to?..."

—Abandon this expedition, at a time when everything indicates that it can succeed! Never!

—So we must resign ourselves to perishing?

—No, Axel, no! Go away. I don't want you to die! Let Hans go with you. Leave me alone!

—Abandon you!

"Leave me alone, I tell you! I have begun this journey; I will complete it, or I will not return. Go, Axel, go!"

My uncle spoke with extreme excitement. His voice, momentarily tender, became harsh and threatening again. He was struggling with a dark energy against the impossible! I didn't want to abandon him at the

bottom of that abyss, and, on the other hand, the instinct for self-preservation drove me to flee from him.

The guide followed this scene with his usual indifference. He understood, however, what was happening between his two companions; our gestures clearly indicated the different path each of us was trying to lead the other down; but Hans seemed to have little interest in the matter in which his existence was at stake, ready to leave if the signal to depart was given, ready to stay at his master's slightest wish.

If only I could have made myself heard by him then! My words, my groans, my voice, would have swayed his cold nature. These dangers, which the guide seemed oblivious to, I would have made him understand and experience firsthand. The two of us might have convinced the stubborn professor. If necessary, we could have forced him to return to the heights of Snæfells!

I approached Hans. I placed my hand on his; he didn't move. I showed him the way to the crater. He remained motionless. My panting face spoke volumes about my suffering. The Iclander gently moved his head, and calmly pointed to my uncle:

"Master," he said.

"The master!" I cried. "Fool! No, he is not the master of your life! You must flee! You must drag him away! Do you hear me? Do you understand me?"

I grabbed Hans by the arm. I wanted to force him to stand up. I was struggling with him. My uncle intervened.

"Calm down, Axel," he said. "You won't get anything from this impassive servant. So, listen to what I have to offer you."

I crossed my arms, looking straight in the face at my uncle.

"The lack of water," he said, "is the only obstacle to the completion of my projects. In this eastern gallery, made of lava, shale, and coal, we haven't encountered a single liquid molecule. It's possible we'll have better luck following the western tunnel."

I shook my head with an expression of profound disbelief.

"Listen to me to the end," the professor continued, raising his voice. "While you lay there motionless, I went to study the layout of this tunnel. It plunges directly into the bowels of the earth, and in a few hours, it will lead us to the granite massif. There we should find abundant springs. The nature of the rock dictates it, and instinct agrees with logic in supporting my conviction. Now, here is what I have to propose to you. When Columbus asked his crews for three days to find new lands, his crews, sick and terrified, nevertheless complied, and he discovered the New World. I, the Columbus of these subterranean regions, ask of you only one more day. If, after that time, I have not found the water we need, I swear to you, we will return to the surface of the earth."

Despite my irritation, I was moved by these words and by the violence my uncle was inflicting upon himself to speak in such a way.

"Well then!" I exclaimed, "let it be done as you wish, and may God reward your superhuman energy. You have only a few hours left to try your luck! Let's go!"

XXII

The descent began again, this time through the new gallery. Hans walked ahead, as was his custom. We hadn't gone a hundred paces when the professor, moving his lamp along the walls, exclaimed:

"Here are the original terrains! We are on the right track! Let's march! Let's march!"

As the Earth gradually cooled in the early days of the world, the decrease in its volume produced dislocations, ruptures, shrinkages, and fissures in the crust. The present-day corridor was a fissure of this kind, through which igneous granite once flowed; its many twists and turns formed an inextricable labyrinth through the primordial soil.

As we descended, the succession of layers composing the original terrain appeared more clearly. Geological science considers this original terrain as the base of the mineral crust, and it has recognized that it is composed of three different layers: schists, gneisses, and mica schists, resting on that unshakeable rock called granite.

Never before had mineralogists met in such wonderful circumstances to study nature on site. What the probe, an unintelligent and brutal machine, could not bring back to the surface of the globe of its internal texture, we were going to study with our eyes, touch with our hands.

Through the layer of schists colored in beautiful shades of green, metallic veins of copper and manganese, with traces of platinum and gold, meandered. I reflected on these riches buried deep within the earth, riches that human greed will never possess! These treasures, buried at such depths by the upheavals of the early days, are beyond the reach of the quake, that neither pickaxe nor digger can ever unearth them.

The schists were succeeded by gneisses, of a stratiform structure, remarkable for the regularity and parallelism of their layers, then by mica schists arranged in large flakes enhanced to the eye by the scintillations of white mica.

The light from the devices, reflected by the small facets of the rock mass, crossed its jets of fire from all angles, and I imagined myself traveling through a hollow diamond, in which the rays broke into a thousand dazzling flashes.

Around six o'clock in the evening, this festival of light began to diminish noticeably, almost to cease; the walls took on a crystalline, but somber, hue; the mica mingled more intimately with the feldspar and quartz, to form the rock par excellence, the hardest of all stones, the one that supports, without being crushed, the four layers of the globe. We were walled in within the immense granite prison.

It was eight o'clock in the evening. There was still no water. I was suffering terribly. My uncle walked on ahead. He didn't want to stop. He strained to hear the murmur of some spring. But nothing.

However, my legs refused to carry me. I resisted my torment so as not to force my uncle to stop. It would have been a blow of despair for him, as the day was ending, the last one that belonged to him.

Finally my strength left me; I cried out and fell.

"To me! I'm dying!"

My uncle retraced his steps. He looked at me, crossing his arms; then these muffled words came from his lips:

"It's all over!"

A terrifying gesture of anger struck my eyes one last time, and I closed my eyes.

When I opened them again, I saw my two companions motionless and curled up in their blankets. Were they asleep? As for me, I couldn't find a moment's sleep. I was suffering too much, especially from the thought

that my illness must be incurable. My uncle's last words echoed in my ear.

"It was all over!" because in such a state of weakness, there was no way to even think about returning to the surface of the globe.

There was a league and a half of Earth's crust! It seemed to me that this mass weighed down on my shoulders. I felt crushed and exhausted myself with violent efforts to turn over on my bed of granite.

Several hours passed. A profound silence reigned around us, a deathly silence. Nothing reached through these walls, the thinnest of which measured five miles thick.

However, in the midst of my drowsiness, I thought I heard a noise; darkness was falling in the tunnel. I looked more closely, and it seemed to me that I saw the Iclander disappearing, lamp in hand.

Why did he leave? Was Hans abandoning us? My uncle was asleep. I wanted to scream. My voice couldn't escape my parched lips. The darkness had grown deep, and the last sounds had just faded away.

"Hans is abandoning us!" I cried. "Hans! Hans!"

I shouted these words to myself. They went no further. However, after the initial shock of terror, I felt ashamed of my suspicions against a man whose conduct had been entirely above board until then. His departure could not have been an escape. Instead of going up the gallery, he was going down it. Evil intentions would have led him up, not down. This reasoning calmed me somewhat, and I returned to another line of thought. Hans, this peaceful man, could only have been roused from his rest by a serious motive. Was he going exploring? Had he heard some whisper during the silent night, the sound of which had not reached me?

XXIII

For an hour, I imagined in my delirious brain all the reasons that could have driven the quiet hunter to act. The most absurd ideas tangled up in my head. I thought I was going mad!

But finally, the sound of footsteps echoed from the depths of the chasm. Hans was coming up. The dim light began to slide along the walls, then it burst through the opening in the corridor. Hans appeared.

He approached my uncle, put his hand on his shoulder and gently woke him up. My uncle got up.

"What is it then?" he said.

—"Vatten," replied the hunter.

It seems that under the influence of intense pain, everyone becomes multilingual. I didn't know a single word of Danish, and yet I instinctively understood our guide's message.

"Water! Water!" I cried, clapping my hands and gesticulating like a madman.

"Water!" my uncle repeated. "Hvar?" he asked the Iclander.

—"Nedat," replied Hans.

Where? Down below! I understood everything. I had grasped the hunter's hands, and I was squeezing them, while he looked at me calmly.

The preparations for departure were not long, and soon we were descending a corridor whose slope reached two feet per fathom.

An hour later, we had covered about a thousand fathoms and descended two thousand feet.

At that moment, we could distinctly hear an unusual sound running through the sides of the granite wall, a kind of muffled roar, like distant thunder. During the first half hour of our walk, not finding the promised spring, I felt my anxieties returning; but then my uncle told me the origin of the noises that were occurring.

"Hans wasn't wrong," he said, "what you hear there is the roar of a torrent."

"A torrent?" I exclaimed.

"There's no doubt about it. An underground river flows around us!"

We quickened our pace, spurred on by anticipation. I no longer felt my fatigue. The sound of murmuring water was already refreshing me; the torrent, after having flowed for a long time above our heads, was now rushing down the left-hand wall, roaring and leaping. I frequently ran my hand over the rock, hoping to find traces of seepage or dampness. But in vain.

Another half hour passed. Another half league was covered.

It then became clear that the hunter, during his absence, had been unable to extend his search further. Guided by an instinct peculiar to mountaineers, to hydrosopes, he "felt" this torrent through the rock, but certainly he had not seen the precious liquid: he had not quenched his thirst there.

Soon it became clear that if we continued our march, we would move away from the torrent whose murmur was tending to diminish.

We turned back. Hans stopped at the precise spot where the torrent seemed to be closest.

I sat down near the wall, while the waters rushed two feet away from me with extreme violence. But a granite wall still separated us from it.

Without thinking, without asking myself if there was some way to obtain this water, I gave in to a first moment of despair.

Hans looked at me and I thought I saw a smile appear on his lips.

He got up and took the lamp. I followed him. He walked towards the wall. I watched him. He pressed his ear to the dry stone and moved it slowly, listening intently. I understood that he was looking for the precise spot where the torrent was loudest. He found this spot on the left-hand side wall, three feet above the ground.

How moved I was! I dared not guess what the hunter wanted to do! But I had to understand him and applaud him, and press him with my caresses, when I saw him seize his pick to attack the rock itself.

"Saved!" I cried, "saved!"

"Yes," my uncle repeated frantically, "Hans is right! Ah! The brave hunter! We wouldn't have found that!"

I truly believe it! Such a method, however simple, would never have occurred to us. Nothing is more dangerous than striking the Earth's framework with a pickaxe. What if some landslide were to occur and crush us! What if the torrent, breaking through the rock, were to engulf us! These dangers were not imaginary; but then the fears of landslides or floods could not deter us, and our thirst was so intense that, to quench it, we would have dug into the very bed of the Ocean.

Hans set to work, a task neither my uncle nor I could have undertaken. Impatience would have caused the rock to shatter under his hasty blows. The guide, on the contrary, calm and measured, gradually wore down the rock with a series of small, repeated blows, carving an opening half a foot wide. I could hear the sound of the torrent growing louder, and I could almost feel the soothing water splashing onto my lips.

Soon the pickaxe sank two feet into the granite wall; the work had been going on for over an hour; I was writhing with impatience! My uncle wanted to use drastic measures. I had difficulty stopping him, and he was already grasping his pickaxe, when suddenly a hissing sound was heard. A jet of water shot from the wall and broke against the opposite side.

Hans, half knocked over by the impact, couldn't hold back a cry of pain. I understood why when, plunging my hands into the liquid jet, I in

turn let out a violent exclamation: the spring was boiling.

"Water at one hundred degrees!" I exclaimed.

"Well, it will cool down," replied my uncle.

The corridor filled with vapors, while a stream formed and disappeared into the underground meanders; soon after, we drew our first sip from it.

Ah! What bliss! What incomparable pleasure! What was this water? Where did it come from? It didn't matter. It was water, and, though still warm, it revived the life that was about to slip away. I drank without stopping, without even tasting it.

It was only after a minute of delight that I exclaimed:

"Hey! But that's ferruginous water!"

"Excellent for the stomach," replied my uncle, "and highly mineralized! This is a trip that will be worth as much as one to Spa or Toeplitz!"

—Ah! That's so good!

"I believe it, water drawn from two leagues underground; it has an inky taste that is not at all unpleasant. A wonderful resource that Hans has provided us with there! Therefore, I propose that we name this beneficial stream after him."

"Good!" I exclaimed.

And the name "Hans-bach" was immediately adopted. Hans was no more proud of it. After a moderate refreshment, he leaned in a corner with his usual calm.

"Now," I said, "we mustn't let this water go to waste."

"What's the point?" replied my uncle, "I suspect the source is inexhaustible."

"No matter! Let's fill the wineskin and the gourds, then we'll try to plug the opening."

My advice was followed. Hans, using granite chips and tow, tried to plug the notch in the wall. It wasn't easy. We burned our hands without success; the pressure was too great, and our efforts remained fruitless.

"It is evident," I said, "that the upper reaches of this watercourse are situated at a great height, judging by the force of the jet."

"That's beyond doubt," replied my uncle, "there are a thousand atmospheres of pressure there, if that column of water is thirty-two thousand feet high. But an idea comes to me."

-Which?

—Why are we so determined to block this opening?

"But, because..."

I would have been embarrassed to find a good reason.

"When our water bottles are empty, are we guaranteed to find ways to refill them?"

—No, obviously.

—Well, let this water flow: it will descend naturally and guide those it refreshes along the way!

"That's a good idea!" I exclaimed, "and with this stream as our companion, there's no reason why we shouldn't succeed in our plans."

"Ah! You're getting there, my boy," said the professor, laughing.

—I'm doing better than just coming here, I'm already here.

"Just a moment! Let's start by taking a few hours of rest."

I had completely forgotten that it was dark. The stopwatch reminded me. Soon each of us, sufficiently restored and refreshed, fell into a deep sleep.

XXIV

The next day we had already forgotten our past sorrows. I was surprised at first not to feel thirsty anymore, and I asked why. The stream that flowed murmuring at my feet took it upon itself to answer me.

We had lunch and drank some of that excellent iron-rich water. I felt completely invigorated and determined to go far. Why shouldn't a man as determined as my uncle succeed, with an industrious guide like Hans, and a "determined" nephew like myself? Those were the wonderful ideas that were taking root in my mind! Had I been offered the chance to climb back to the summit of Snæfells, I would have refused with indignation.

But fortunately, it was only a matter of going downhill.

"Let's go!" I cried, my enthusiastic accents awakening the ancient echoes of the globe.

The march resumed on Thursday at eight o'clock in the morning. The granite corridor, winding its way in sinuous twists and turns, presented unexpected bends and resembled a labyrinth; but, on the whole, its main direction was always southeast. My uncle constantly consulted his compass with the greatest care to determine the distance covered.

The gallery descended almost horizontally, with a slope of no more than two inches per fathom. The stream flowed gently, murmuring beneath our feet. I likened it to some familiar spirit guiding us through the earth, and I stroked the warm naiad whose songs accompanied our steps. My good humor readily took on a mythological air.

As for my uncle, he railed against the horizontality of the road, he, "the man of verticals." His path stretched on endlessly, and instead of gliding along the Earth's radius, as he put it, he was heading off along

the hypotenuse. But we had no choice, and as long as we were making progress toward the center, however little, we couldn't complain.

Moreover, from time to time, the slopes lowered; the naiad began to tumble down, bellowing, and we descended deeper with her.

In short, that day and the next, we covered a lot of horizontal ground, and relatively little vertical ground.

On Friday evening, July 10, according to our estimate, we should have been thirty leagues southeast of Reykjavik and at a depth of two and a half leagues.

Beneath our feet, a rather frightening well opened up. My uncle couldn't help but clap his hands as he calculated the steepness of its slopes.

"This will take us far," he exclaimed, "and easily, for the rock's protrusions form a veritable staircase!"

Hans positioned the ropes to prevent any accidents. The descent began. I hesitate to call it perilous, as I was already familiar with this type of exercise.

This shaft was a narrow fissure cut into the rock, the kind we call a "fault"; the contraction of the Earth's structure during its cooling had clearly produced it. If it once served as a passage for the eruptive material spewed forth by Snæfells, I couldn't explain how this material left no trace there. We were descending a sort of rotating screw that looked as if it had been made by human hands.

Every fifteen minutes, we had to stop to take a necessary rest and restore the elasticity of our hocks. We would then sit on some protrusion, legs dangling, chat while eating, and quench our thirst at the stream.

It goes without saying that, in this gorge, the Hansbach had become a waterfall, reducing its volume; but it was more than enough to quench our thirst; besides, with the gentler slopes, it could not fail to resume its peaceful course. At that moment, it reminded me of my worthy uncle,

his impatience and his temper, while on the gentler slopes, it was the calm of the Icelandic hunter.

On July 6th and 7th, we followed the spirals of this fault, penetrating another two leagues into the Earth's crust, which was nearly five leagues below sea level. But, on the 8th, around noon, the fault took on a much gentler inclination in the southeast direction, about forty-five degrees.

The journey then became easy and perfectly monotonous. It was unlikely to have been otherwise. The trip could not be varied by any incidents in the landscape.

Finally, on Wednesday the 15th, we were seven leagues underground and about fifty leagues from Sneffels. Although we were a little tired, our health remained in a reassuring state, and the travel pharmacy was still intact.

My uncle kept track of the compass, chronometer, pressure gauge, and thermometer readings, hour by hour—the very same readings he published in the scientific account of his voyage. He could therefore easily assess his position. When he told me we were fifty leagues apart horizontally, I couldn't help but exclaim.

"What's wrong with you?" he asked.

—Nothing, I'm just making a thought.

—Which one, my boy?

—That's because, if your calculations are correct, we are no longer under Iceland.

—Do you think so?

"It's easy to verify that."

I took my measurements using a compass on the map.

"I wasn't mistaken," I said; "we have passed Cape Portland, and these fifty leagues to the southeast put us in the open sea."

"Under the open sea," replied my uncle, rubbing his hands together.

"So," I exclaimed, "the Ocean stretches above our heads!"

"Bah! Axel, nothing could be more natural! Aren't there coal mines in Newcastle that jut out under the waves?"

The professor might have found this situation quite simple; but the thought of walking beneath the mass of water did not fail to trouble me. And yet, whether the plains and mountains of Iceland hung above our heads, or the waves of the Atlantic, it made little difference, in short, as long as the granite framework was solid. Besides, I quickly grew accustomed to this idea, for the passage, sometimes straight, sometimes winding, capricious in its slopes as in its turns, but always running southeast, and always descending deeper, rapidly led us to great depths.

Four days later, on Saturday, July 18, in the evening, we arrived at a kind of rather large cave; my uncle gave Hans his three weekly rixdales, and it was decided that the next day would be a day of rest.

XXV

So I awoke on Sunday morning without the usual preoccupation of an immediate departure. And, although it was in the deepest abyss, it was nonetheless pleasant. Besides, we were accustomed to this troglodyte existence. I hardly thought about the sun, the stars, the moon, trees, houses, cities, all those earthly superfluities that sublunar beings have made a necessity of. As fossils, we disregarded these useless wonders.

The cave formed a vast chamber; over its granite floor flowed the faithful stream. At such a distance from its source, its water was only at ambient temperature and could be drunk without difficulty.

After lunch, the professor wanted to spend a few hours organizing his daily notes.

"First," he said, "I will make calculations, in order to determine exactly our situation; I want to be able, upon our return, to draw a map of our journey, a sort of vertical section of the globe, which will give the profile of the expedition.

—That will be very curious, uncle; but will your observations have a sufficient degree of accuracy?

—Yes. I have carefully noted the angles and slopes; I am sure I won't make a mistake. Let's first see where we are. Take the compass and observe the direction it indicates.

I looked at the instrument, and, after careful examination, I replied:

"East-southeast quarter.

"Good!" said the professor, noting the observation and making a few quick calculations. "I conclude that we have traveled eighty-five leagues from our starting point."

—So, we're travelling under the Atlantic?

-Perfectly.

—And, at this moment, a storm may be raging there, and ships are being tossed about above our heads by the waves and the hurricane?

—That's possible.

—And the whales come and beat their tails against the walls of our prison?

—Don't worry, Axel, they won't be able to shake it. But let's get back to our calculations. We are in the southeast, eighty-five leagues from the base of Sneffels, and, according to my previous notes, I estimate the depth reached to be sixteen leagues.

"Sixteen leagues!" I exclaimed.

—Probably.

—But that is the extreme limit assigned by science to the thickness of the Earth's crust.

—I'm not saying no.

—And here, according to the law of increasing temperature, a heat of fifteen hundred degrees should exist.

—Should, my boy.

—And all that granite could not remain in a solid state and would be in full melting.

—You see that this is not the case and that the facts, as usual, come to refute the theories.

—I am forced to agree, but still, it surprises me.

—What does the thermometer indicate?

—Twenty-seven degrees and six tenths.

—So, the scientists are 1,474.4 degrees short of being right. Therefore, the proportional increase in temperature is an error. Therefore, Humphry Davy wasn't wrong. Therefore, I wasn't wrong to listen to him. What do you have to say?

-Nothing."

In truth, I would have had much to say. I did not accept Davy's theory in any way; I still maintained the theory of central heat, although I did not experience its effects. I preferred to believe, in truth, that this vent of an extinct volcano, covered by lava with a refractory coating, prevented the temperature from propagating through its walls.

But, without stopping to look for new arguments, I simply accepted the situation as it was.

"My uncle," I continued, "I accept all your calculations as correct, but allow me to draw a rigorous conclusion from them.

—Go, my boy, take your time.

—At the point where we are, under the latitude of Iceland, the Earth's radius is approximately fifteen hundred and eighty-three leagues?

—Fifteen hundred and eighty-three and one-third leagues.

—Let's say sixteen hundred leagues, round numbers. On a journey of sixteen hundred leagues, we've covered twelve?

—As you say.

—And that at the cost of eighty-five leagues diagonally?

--Perfectly.

—In about twenty days?

—In twenty days.

"Now, sixteen leagues make up one hundredth of the Earth's radius. If we continue like this, it will take us two thousand days, or nearly five and a half years, to descend!"

The professor did not reply.

"Not to mention that, if a vertical distance of sixteen leagues is bought by a horizontal distance of eighty, that will make eight thousand leagues in the southeast, and we will have long since left the circumference at some point before reaching its center!

"To hell with your calculations!" my uncle retorted angrily. "To hell with your assumptions! What are they based on? Who says this corridor doesn't lead directly to our goal? Besides, I have precedent: what I'm doing here, someone else has done, and where he succeeded, I too will succeed."

—I hope so; but, well, I am certainly allowed...

"You are permitted to remain silent, Axel, when you wish to speak such unreasonably."

I could see that the terrible professor threatened to reappear in the guise of my uncle, and I considered myself warned.

"Now," he continued, "look at the pressure gauge. What does it indicate?"

—Considerable pressure.

—Good. You see that by descending slowly, by gradually getting used to the density of this atmosphere, we do not suffer from it at all.

—None at all, except for some earaches.

—It's nothing, and you'll make this discomfort disappear by quickly bringing the outside air into contact with the air in your lungs.

"Perfect," I replied, determined not to upset my uncle again. "There's even a real pleasure in feeling immersed in this denser atmosphere. Have you noticed how intensely sound travels here?"

—No doubt; a deaf person would eventually learn to hear it perfectly.

—But this density will undoubtedly increase?

—Yes, according to a rather vague law; it is true that the intensity of gravity will decrease as we descend. You know that it is at the very surface of the earth that its action is most keenly felt, and that at the center of the globe objects no longer have any weight.

—I know that; but tell me, won't this air eventually acquire the density of water?

—Probably, under a pressure of seven hundred and ten atmospheres.

—And lower down?

—Further down, this density will increase even more.

—How will we get down then?

—Well, we'll put pebbles in our pockets.

"My word, uncle, you have an answer for everything."

I did not dare to go further into the field of hypotheses, because I would have encountered some impossibility that would have made the professor jump.

It was evident, however, that the air, under a pressure that could reach thousands of atmospheres, would eventually pass into a solid state, and then, assuming that our bodies had resisted, we would have to stop, despite all the reasoning in the world.

But I did not raise this argument. My uncle would have countered with his eternal Saknussem, a worthless precedent, because, assuming the Icelandic scholar's journey was true, there was only one simple thing to say:

In the sixteenth century, neither the barometer nor the manometer had been invented; how then could Saknussem have determined his arrival at the center of the globe?

But I kept this objection to myself, and I waited for events to unfold.

The rest of the day was spent in calculations and conversation. I always agreed with Professor Lidenbrock, and I envied Hans's perfect

indifference, who, without seeking effects and causes, went blindly wherever destiny led him.

XXVI

Admittedly, things had been going well so far, and I would have been churlish to complain. If the average level of "difficulties" didn't increase, we were bound to reach our goal. And what glory that would have been! I'd even started reasoning like Lidenbrock. Seriously. Was it due to the strange environment I was living in? Perhaps.

For several days, steeper slopes, some even terrifyingly vertical, led us deep into the heart of the massif; on some days, we gained a league and a half to two leagues towards the center. Perilous descents, during which Hans's skill and remarkable composure proved invaluable. This impassive Iclander devoted himself with an incomprehensible lack of effort, and thanks to him, we overcame more than one difficult situation from which we would not have emerged on our own.

For example, his muteness increased day by day. I even think it was affecting us. External objects have a real effect on the brain. Those who shut themselves away between four walls eventually lose the ability to connect ideas and words. How many prisoners have become imbeciles, if not insane, from lack of exercise of their thinking faculties!

During the two weeks following our last conversation, nothing noteworthy occurred. I can recall, and with good reason, only one extremely serious event. It would have been difficult for me to forget even the smallest detail of it.

On August 7th, our successive descents had brought us to a depth of thirty leagues; that is to say, there were thirty leagues of rocks, ocean, continents, and cities above us. We must then have been two hundred leagues from Iceland.

On that day the tunnel followed a slightly inclined plane.

I walked ahead; my uncle carried one of Ruhmkorff's two instruments, and I carried the other. I examined the layers of granite.

Suddenly, when I turned around, I realized I was alone.

"Well," I thought, "I've been walking too fast, or Hans and my uncle have stopped along the way. Come on, I have to catch up with them. Luckily the path doesn't climb significantly."

I retraced my steps. I walked for a quarter of an hour. I looked. Nobody. I called out. No answer. My voice was lost amidst the cavernous echoes it suddenly awakened.

I began to feel worried. A shiver ran through my entire body.

"Calm down," I said aloud. "I'm sure I'll find my companions. There aren't two paths! But I was ahead, let's go back."

I went back upstairs for half an hour. I listened for any calls directed at me, and in that dense atmosphere, they could have come from far away. An extraordinary silence reigned in the immense gallery.

I stopped. I couldn't believe I was alone. I wanted to be astray, not lost. When you're lost, you find your way back.

"Come now," I repeated, "since there's only one road, and since they're following it, I must catch up with them. I'll just have to go back up a bit. Unless, not seeing me, and forgetting that I was ahead of them, they've had the idea of turning back. Well! Even in that case, if I hurry, I'll find them. It's obvious!"

I repeated these last words like a man who is not convinced. Moreover, to associate these simple ideas and bring them together in the form of reasoning, I had to spend a very long time.

A doubt then crept into my mind. Was I really ahead? Certainly. Hans was following me, ahead of my uncle. He had even stopped for a few moments to reattach his luggage to his shoulder. This detail came back to me. It was at that very moment that I had had to continue on my way.

“Besides,” I thought, “I have a sure way of not getting lost, a thread to guide me through this labyrinth, and one that cannot break: my faithful stream. I only have to follow its course upstream, and I will surely find traces of my companions.”

This reasoning revived me, and I resolved to get going again without losing a moment.

How I bless my uncle's foresight, when he prevented the hunter from plugging the cut made in the granite wall! Thus this beneficent spring, after quenching our thirst during the journey, would guide me through the windings of the earth's crust.

Before going back upstairs, I thought a wash would do me some good.

So I bent down to plunge my forehead into the water of the Hans-bach!

Imagine my astonishment!

I was walking on dry, rough granite! The stream no longer flowed at my feet!

XXVII

I cannot describe my despair; no word in the human language could express my feelings. I was buried alive, with the prospect of dying in the torments of hunger and thirst.

Mechanically, I ran my burning hands over the ground. How parched that rock seemed to me!

But how had I abandoned the stream? For, at last, it was no longer there! I then understood the reason for this strange silence, when I listened for the last time to see if any call from my companions might reach my ear. Thus, at the moment my first step took the imprudent path, I did not notice the stream's absence. It is evident that at that moment, a fork in the tunnel opened before me, while the Hans-bach, obeying the whims of another slope, flowed off with my companions toward unknown depths!

How could I get back? There were no traces. My foot left no imprint on the granite. I racked my brains trying to find a solution to this unsolvable problem. My situation could be summed up in one word: lost!

Yes! Lost at a depth that seemed immeasurable to me! Those thirty leagues of Earth's crust weighed on my shoulders with a terrible weight! I felt crushed.

I tried to bring my thoughts back to earthly matters. I could scarcely manage it. Hamburg, the house on Königstrasse, my poor Graüben—all that world in which I was lost, flashed swiftly before my bewildered memory. I relived, in a vivid hallucination, the incidents of the journey: the crossing, Iceland, Mr. Fridriksson, the Snæfells! I told myself that if, in my situation, I still retained even a shadow of hope, it would be a sign of madness, and that it was better to despair!

Indeed, what human power could bring me back to the surface of the globe and separate these enormous vaults that arched above my head? Who could put me back on the road home and reunite me with my companions?

"Oh! my uncle!" I cried with the accent of despair.

That was the only word of reproach that came to my lips, for I understood what the unfortunate man must be suffering in seeking me out in turn.

When I found myself thus utterly helpless, unable to do anything for my salvation, I thought of divine assistance. Memories of my childhood, of my mother whom I had only known in the days of kisses, came flooding back to me. I turned to prayer, however little right I might have had to be heard by the God to whom I addressed myself so late in life, and I implored Him fervently.

This return to Providence brought me some calm, and I was able to concentrate all the forces of my intelligence on my situation.

I had three days' worth of food, and my canteen was full. However, I couldn't stay alone any longer. But should I go up or down?

Go up, obviously! Always go up!

I had to arrive at the point where I had left the spring, at the fateful fork in the road. There, once the stream was under my feet, I could always regain the summit of Sneffels.

How could I not have thought of that sooner! There was clearly a chance of salvation there. The most urgent thing was therefore to find the course of the Hans-bach again.

I got up and, leaning on my iron-tipped staff, I climbed back up the gallery. The slope was quite steep. I walked with hope and without hesitation, like a man who has no choice of which path to take.

For half an hour, nothing hindered my progress. I tried to find my way by the shape of the tunnel, the protrusion of certain rocks, the arrangement of the crevices. But no particular sign caught my attention,

and I soon realized that this passage could not lead me back to the fork. It was a dead end. I ran up against an impenetrable wall and fell onto the rock.

What terror? What despair seized me then, I cannot say. I remained devastated. My last hope had just shattered against that granite wall.

Lost in this labyrinth whose twists and turns crisscrossed in every direction, I no longer had to attempt an impossible escape. I had to die the most dreadful of deaths! And, strangely enough, it occurred to me that if my fossilized body were ever found, its discovery thirty leagues deep within the earth would raise serious scientific questions!

I wanted to speak aloud, but only hoarse tones escaped my parched lips. I was panting.

Amidst these anxieties, a new terror seized my mind. My lamp had bent when it fell. I had no way to repair it. Its light was fading and I would miss it!

I watched the light stream dwindle in the coil of the apparatus. A procession of moving shadows unfolded on the darkened walls. I no longer dared lower my eyelid, fearing to lose the slightest atom of this fleeting light! At any moment it seemed to me that it would vanish and that "blackness" would engulf me.

Finally, a last glimmer flickered in the lamp. I followed it, I drew it in with my eyes, I concentrated all the power of my gaze on it, as on the last sensation of light they were given to experience, and I remained plunged in the immense darkness.

What a terrible cry escaped me! On earth, in the midst of the deepest nights, light never entirely relinquishes its rights; it is diffuse, it is subtle; but, however little remains, the retina of the eye eventually perceives it! Here, nothing. Absolute darkness made me blind in every sense of the word.

Then my head went blank. I got up, arms outstretched, trying the most painful gropings; I began to flee, rushing my steps haphazardly through this inextricable labyrinth, always descending, running through

the earth's crust, like an inhabitant of subterranean faults, calling, shouting, screaming, soon bruised on the protrusions of the rocks, falling and getting up covered in blood, seeking to drink this blood that flooded my face, and always waiting for some unforeseen wall to come and offer my head an obstacle against which to shatter!

Where did this senseless race lead me? I will never know. After several hours, no doubt completely exhausted, I fell like an inert mass down the wall, and lost all sense of existence!

XXVIII

When I came to, my face was wet, wet with tears. How long that state of numbness lasted, I couldn't say. I had no way of perceiving time. Never was solitude like mine, never was there such complete abandonment!

After my fall, I had lost a lot of blood. I felt drenched in it! Ah! How I regretted not being dead "and that it was still to be done!" I wanted to think no more. I banished all thoughts and, overcome by the pain, I rolled near the opposite wall.

I was already feeling faintness overtaking me again, and with it, utter annihilation, when a violent noise struck my ear. It resembled the prolonged rumble of thunder, and I heard the sound waves gradually disappear into the distant depths of the abyss.

Where did this noise come from? From some phenomenon, no doubt, taking place within the Earth's mass. The explosion of a gas, or the collapse of some powerful foundation of the globe.

I listened again. I wanted to know if the noise would happen again. Fifteen minutes passed. Silence reigned in the gallery. I couldn't even hear my own heartbeat anymore.

Suddenly my ear, pressed by chance against the wall, thought I overheard vague, elusive, distant words. I started.

"This is a hallucination!" I thought.

No, not at all. Listening more closely, I could actually hear a murmur of voices. But understanding what was being said was beyond my weakness. Yet, they were speaking. I was certain of it.

For a moment I feared that those words were my own, echoed back. Perhaps I had shouted without realizing it? I closed my lips tightly and pressed my ear to the wall again.

"Yes, of course, we're talking! We're talking!"

Moving even a few feet further along the wall, I could hear more distinctly. I managed to make out uncertain, strange, incomprehensible words. They reached me like whispered, murmured words. The word "förlorad" was repeated several times, and with an accent of pain.

What did it mean? Who was saying it? My uncle or Hans, obviously. But if I could hear them, then they could hear me.

"To me!" I cried at the top of my lungs, "To me!"

I listened, I peered in the shadows for a reply, a cry, a sigh. Nothing was heard. A few minutes passed. A whole world of ideas had blossomed in my mind. I thought that my weakened voice could not reach my companions.

"Because it is they," I repeated. "What other men would be buried thirty leagues underground?"

I began to listen again. Moving my ear along the wall, I found a mathematical point where the voices seemed to reach their maximum intensity. The word "förlorad" came back to my ear, then that rumble of thunder that had pulled me from my torpor.

"No," I said, "no. These sounds are not being heard through the mountain. The wall is made of granite; it wouldn't allow even the loudest explosion to pass through! This noise is coming from the gallery itself! There must be some very particular acoustic effect here!"

I listened again, and this time, yes! this time, I heard my name distinctly thrown across space!

Was it my uncle who said it? He was talking with the guide, and the word "förlorad" was a Danish word!

Then I understood everything. To make myself heard, I had to speak precisely along this wall, which would serve to conduct my voice like a wire conducts electricity.

But I had no time to lose. Had my companions moved a few paces away, the acoustic phenomenon would have been destroyed. So I approached the wall and uttered these words as clearly as possible:

"My uncle Lidenbrock!"

I waited in the most intense anxiety. Sound does not travel extremely fast. The density of the air layers does not even increase its speed; it only increases its intensity. A few seconds, centuries, passed, and finally these words reached my ear.

"Axel, Axel! Is that you?"

.....

"Yes! Yes!" I replied.

.....

"My poor child, where are you?"

.....

"Lost in the deepest darkness!"

.....

"But what about your lamp?"

.....

"Extinct."

.....

"And the stream?"

.....

"Disappeared."

.....

"Axel, my poor Axel, take heart!"

.....

"Wait a moment, I'm exhausted; I no longer have the strength to answer. But speak to me!"

.....

"Courage," my uncle continued; "don't speak, just listen to me. We searched for you up and down the gallery. We couldn't find you. Oh! I wept for you so, my child! Finally, assuming you were still on the path to the Hans-bach, we went back down, firing our rifles. Now, if our voices can unite, it's purely an acoustic effect! Our hands cannot touch! But don't despair, Axel! It's already something to hear each other!"

.....

Meanwhile, I had been thinking. A certain hope, still vague, returned to my heart. First of all, there was one thing I needed to know. So I brought my lips close to the wall, and I said:

"My uncle?"

.....

"My child?" was the reply I received after a few moments.

.....

"First, we need to know how far apart we are."

.....

"That's easy."

.....

"Do you have your stopwatch?"

.....

"Yes."

.....

"Well, take it. Say my name, noting the exact second you speak. I will repeat it, and you will also observe the precise moment my reply comes to you."

.....

"Good, and half the time between my request and your response will indicate the time it takes my voice to reach you."

.....

"That's right, uncle."

.....

"Are you ready?"

.....

"Yes."

.....

"Well, pay attention, I'm going to say your name."

.....

I put my ear to the wall, and as soon as the word "Axel" reached me, I immediately replied "Axel," then I waited.

.....

"Forty seconds," my uncle then said; "forty seconds elapsed between the two words; therefore, the sound takes twenty seconds to travel. Now, at 1,120 feet per second, that makes 20,400 feet, or one and a half and one-eighth leagues."

.....

"A league and a half!" I murmured.

.....

"Well, that can be overcome, Axel!"

.....

"But should we go up or down?"

.....

"Descend, and here is why. We have arrived at a vast space, into which a great number of galleries converge. The one you have followed cannot fail to lead you there, for it seems that all these fissures, these fractures of the globe, radiate around the immense cavern we occupy. So get up and resume your journey; walk, drag yourself, if need be, slide down the steep slopes, and you will find our arms to receive you at the end of the path. Onward, my child, onward!"

.....

Those words revived me.

"Farewell, my uncle," I cried; "I am leaving. Our voices will no longer be able to communicate with each other, from the moment I leave this place! Farewell then!"

.....

"Goodbye, Axel! Goodbye!"

.....

These were the last words I heard. This surprising conversation, carried out across the vast expanse of the earth and exchanged over a distance of more than a league, ended with these words of hope! I offered a prayer of thanks to God, for he had led me through these dark immensities to perhaps the only place where the voices of my companions could reach me.

This astonishing acoustic effect was easily explained by the laws of physics alone; it stemmed from the shape of the corridor and the conductivity of the rock. There are many examples of this propagation

of sounds imperceptible to the intervening spaces. I recalled that this phenomenon had been observed in numerous places, including the inner gallery of St. Paul's Cathedral in London, and especially amidst the curious caverns of Sicily, those latomies located near Syracuse, the most marvelous of which is known as the Ear of Dionysius.

These memories came flooding back to me, and I saw clearly that, since my uncle's voice reached me, no obstacle stood between us. By following the path of sound, I should logically arrive just as he had, if my strength didn't fail me along the way.

So I got up. I dragged myself rather than walked. The slope was quite steep; I let myself slide down.

Soon the speed of my descent increased to a frightening proportion, and threatened to resemble a fall. I no longer had the strength to stop.

Suddenly the ground gave way beneath my feet. I felt myself rolling and bouncing on the rough edges of a vertical gallery, a veritable shaft; my head struck a sharp rock, and I lost consciousness.

XXIX

When I came to, I was in semi-darkness, lying on thick blankets. My uncle was watching, searching my face for any trace of life. At my first breath, he took my hand; at my first glance, he cried out with joy.

"He lives! He lives!" he cried.

—Yes, I replied in a weak voice.

"My child," said my uncle, embracing me on his chest, "you are saved!"

I was deeply moved by the tone with which these words were spoken, and even more so by the care that accompanied them. But such trials were necessary to elicit such an outpouring from the professor.

At that moment Hans arrived. He saw my hand in my uncle's; I dare say that his eyes expressed keen satisfaction.

"God dag," he said.

"Good morning, Hans, good morning," I murmured. "And now, Uncle, tell me where we are at this moment?"

—Tomorrow, Axel, tomorrow; today you are still too weak; I have wrapped your head in compresses that must not be disturbed; so sleep, my boy, and tomorrow you will know everything.

—But at least, I continued, what time, what day is it?

"Eleven o'clock at night; today is Sunday, August 9th, and I will not allow you to question me again before the 10th of this month."

In truth, I was very weak; my eyes closed involuntarily. I needed a night's rest; so I let myself drift off to sleep with the thought that my isolation had lasted four long days.

The next morning, upon waking, I looked around. My bunk, made up of all the travel blankets, was set up in a charming cave, adorned with magnificent stalagmites, its floor covered in fine sand. A semi-darkness reigned there. No torch, no lamp was lit, and yet certain inexplicable lights came from outside, penetrating through a narrow opening in the cave. I also heard a vague and undefined murmur, like waves breaking on a shore, and sometimes the whistling of the breeze.

I wondered if I was truly awake, if I was still dreaming, if my brain, fractured by my fall, was perceiving purely imaginary sounds. However, neither my eyes nor my ears could be so mistaken.

"That's a ray of sunlight," I thought, "slipping through that crack in the rocks! That's the murmur of the waves! That's the whistling of the breeze! Am I mistaken, or have we returned to the surface of the earth? Has my uncle abandoned his expedition, or has he happily completed it?"

I was asking myself these unsolvable questions when the professor entered.

"Hello, Axel!" he said cheerfully. "I'd gladly bet you're doing well!"

—Yes, I said, sitting up on the covers.

—That must have been the case, because you slept peacefully. Hans and I took turns watching over you, and we saw your recovery making significant progress.

—Indeed, I feel invigorated, and the proof is that I will do justice to the lunch you will be kind enough to serve me!

"You'll eat, my boy: your fever has gone. Hans rubbed your wounds with some ointment the Icelanders keep secret, and they've healed wonderfully. Our hunter is a fine fellow!"

While we were talking, my uncle was preparing some food which I devoured, despite his warnings. Meanwhile, I bombarded him with questions which he eagerly answered.

I then learned that my fortuitous fall had brought me precisely to the end of an almost perpendicular gallery; as I had arrived in the middle of a torrent of stones, the smallest of which would have been enough to crush me, it had to be concluded that part of the rock face had slid with me. This terrifying vehicle thus carried me right into my uncle's arms, where I fell, bloody and lifeless.

"Truly," he told me, "it's astonishing that you haven't killed yourself a thousand times. But, for God's sake! Let's not part again, for we might never see each other again."

"Let's not part again!" So the journey wasn't over? My eyes opened wide in astonishment, which immediately prompted this question:

"What's wrong, Axel?"

—A request to make of you... You say that I am safe and sound?

—Probably.

—Are all my limbs intact?

--Certainly.

—And my head?

—Your head, apart from a few bruises, is perfectly in its place on your shoulders.

—Well, I'm afraid my brain might be disturbed,

—Disturbed?

—Yes. We haven't returned to the surface of the globe?

—No, certainly not!

—Then I must be crazy, because I see the light of day, I hear the sound of the wind blowing and the sea breaking!

—Ah! Is that all?

—Will you explain it to me?

—I will not explain anything to you, because it is inexplicable; but you will see and understand that geological science has not yet had its last word.

"Let's go out then!" I cried, jumping up abruptly.

—No, Axel, no! The fresh air could harm you.

—The great outdoors?

—Yes, the wind is quite strong. I don't want you to expose yourself like that.

—But I assure you that I am doing wonderfully.

—A little patience, my boy. A relapse would put us in a difficult position, and we mustn't waste any time, because the journey could be long.

—The crossing?

—Yes, rest some more today, and we'll embark tomorrow.

"Let's get on board!"

That last word made me jump.

What! Embark us! Did we have a river, a lake, a sea at our disposal? Was a ship anchored in some inland port?

My curiosity was aroused to the highest degree. My uncle tried in vain to restrain me. When he saw that my impatience would do me more harm than satisfying my desires, he gave in.

I dressed quickly; as an extra precaution, I wrapped myself in one of the blankets and left the cave.

XXX

At first I saw nothing; my eyes, unaccustomed to the light, closed abruptly. When I was able to reopen them, I remained even more astonished than amazed.

"The sea!" I cried.

"Yes," replied my uncle, "the Lidenbrock Sea; and, I like to think, no navigator will dispute with me the honor of having discovered it and the right to name it after myself!"

A vast expanse of water, the beginning of a lake or an ocean, stretched beyond the limits of sight. The deeply indented shore offered to the last undulations of the waves fine, golden sand, strewn with the tiny shells where the first beings of creation once lived. The waves broke there with that sonorous murmur peculiar to enclosed and immense spaces; a light foam rose in the breath of a moderate breeze, and a few sprays reached my face. On this gently sloping shore, about a hundred fathoms from the edge of the waves, came the buttresses of enormous rocks that rose and flared to an immeasurable height. Some, tearing the shore with their sharp edges, formed headlands and promontories eroded by the relentless surf. Further on, the eye followed their clearly outlined mass against the hazy background of the horizon.

It was a true ocean, with the capricious outline of terrestrial shores, but deserted and of a terrifyingly wild aspect.

If my gaze could wander far across this sea, it was because a "special" light illuminated its every detail. Not the sunlight with its brilliant beams and the splendid radiance of its rays, nor the pale, vague glow of the moon, which is merely a reflection without heat. No. The illuminating power of this light, its shimmering diffusion, its clear, dry whiteness, the slight rise in its temperature, its brilliance actually surpassing that of the moon, clearly indicated a purely electrical origin.

It was like an aurora borealis, a continuous cosmic phenomenon, filling this cavern capable of containing an ocean.

The vault suspended above my head, the sky, if you will, seemed made of great clouds, shifting and ever-changing vapors, which, through condensation, would on certain days resolve into torrential rains. I would have thought that, under such strong atmospheric pressure, water evaporation could not occur, and yet, for some physical reason I couldn't fathom, there were vast, expansive clouds in the air. But then, "the weather was fine." The electrical currents produced astonishing plays of light on the very high clouds; vivid shadows were cast on their lower wisps, and often, between two disjointed layers, a ray of light slipped to us with remarkable intensity. But, in short, it wasn't the sun, since its light lacked warmth. The effect was sad and supremely melancholic. Instead of a firmament shining with stars, I felt above these clouds a granite vault crushing me with its full weight, and this space, however immense it was, would not have been sufficient for the promenade of the least ambitious of satellites.

I then remembered the theory of an English captain who likened the earth to a vast hollow sphere, inside which the air remained luminous due to its pressure, while two celestial bodies, Pluto and Proserpine, traced their mysterious orbits. Could he have been right?

We were truly imprisoned in an enormous excavation. Its width could not be judged, since the shoreline widened as far as the eye could see, nor its length, for the gaze was soon stopped by a somewhat indistinct horizon. As for its height, it must have exceeded several leagues. Where did this vault rest upon its granite buttresses? The eye could not discern it; but there was such a cloud suspended in the atmosphere, whose elevation must have been estimated at two thousand fathoms, an altitude greater than that of terrestrial vapors, and undoubtedly due to the considerable density of the air.

The word "cave" obviously doesn't convey my idea of describing this immense environment. But the words of human language cannot suffice for anyone venturing into the depths of the globe.

I didn't know, moreover, what geological phenomenon could explain the existence of such an excavation. Could the cooling of the globe have produced it? I was familiar, from travelers' accounts, with certain famous caverns, but none of them were of such dimensions.

If the Guachara cave in Colombia, visited by Mr. von Humboldt, had not revealed the secret of its depth to the scholar who explored it for a distance of 2,500 feet, it likely did not extend much further. The immense Mammoth Cave in Kentucky was indeed of gigantic proportions, since its vault rose 500 feet above an unfathomable lake, and travelers traversed it for more than 10 leagues without reaching its end. But what were these caverns compared to the one I was then admiring, with its vaporous ceiling, its electrical radiations, and a vast sea enclosed within its walls? My imagination felt powerless before this immensity.

I contemplated all these wonders in silence. Words failed me to express my sensations. I felt as if I were witnessing, on some distant planet, Uranus or Neptune, phenomena of which my earthly nature was unaware. New sensations required new words, and my imagination could not provide them. I watched, I thought, I admired with a stupefaction mingled with a certain amount of awe.

The unexpectedness of this spectacle had brought back to my face the colors of health; I was treating myself with astonishment and working on my healing by means of this new therapy; moreover, the vivacity of a very dense air revived me, by providing more oxygen to my lungs.

It is easy to understand that after being imprisoned for forty-seven days in a narrow gallery, it was an infinite pleasure to breathe in that breeze laden with moist, salty emanations.

So I had no reason to regret leaving my dark cave. My uncle, already accustomed to these wonders, was no longer astonished.

"Do you feel up to going for a walk?" he asked me.

—Yes, certainly, I replied, and nothing will please me more.

"Well then, take my arm, Axel, and let's follow the curves of the shore."

I readily agreed, and we began to explore this new ocean. On the left, steep rocks, piled one on top of the other, formed a titanic jumble of prodigious effect. Countless waterfalls cascaded down their sides, flowing in clear, resounding sheets; a few light vapors, leaping from rock to rock, marked the spot of hot springs, and streams flowed gently towards the common basin, seeking in the slopes the opportunity to murmur more pleasantly.

Among these streams, I recognized our faithful traveling companion, the Hans-bach, which came to lose itself peacefully in the sea, as if it had never done anything else since the beginning of the world.

"We will miss him now," I said with a sigh.

"Bah!" replied the professor, "him or someone else, what does it matter?"

I found the answer a little ungrateful.

But at that moment my attention was drawn to an unexpected sight. Five hundred paces away, around the bend of a high promontory, a tall, bushy, thick forest appeared before our eyes. It was made up of medium-sized trees, pruned into regular umbrellas with clean, geometric outlines; the currents of the atmosphere seemed to have no hold on their foliage, and, amidst the gusts, they remained motionless like a mass of petrified cedars.

I quickened my pace. I couldn't put a name to these unusual plants. Were they not among the two hundred thousand plant species known until then, and did they need to be given a special place in the flora of lake vegetation? No. When we arrived in their shade, my surprise was nothing but admiration.

Indeed, I found myself in the presence of products of the earth, but cut on a gigantic pattern. My uncle immediately called them by their names.

"It's just a forest of mushrooms," he said.

And he wasn't wrong. Just consider the growth achieved by these plants, so beloved of warm and humid environments. I knew that the "*Lycoperdon giganteum*," according to Bulliard, reaches eight to nine feet in circumference; but these were white mushrooms, thirty to forty feet tall, with a cap of equal diameter. They were there by the thousands; the light couldn't penetrate their thick shade, and complete darkness reigned beneath these domes, juxtaposed like the round roofs of an African city.

However, I wanted to venture further. A deadly cold descended from those fleshy vaults. For half an hour, we wandered in those damp shadows, and it was with a true sense of well-being that I reached the shores of the sea again.

But the vegetation of this subterranean land was not limited to these fungi. Further on, a great number of other trees with discolored foliage rose in groups. They were easy to recognize; they were the humble shrubs of the earth, with phenomenal dimensions, clubmoss a hundred feet high, giant sigillaria, tree ferns as large as the firs of high latitudes, lepidodendrons with bifurcated cylindrical stems, ending in long leaves and bristling with rough hairs like monstrous succulents.

"Astonishing, magnificent, splendid!" exclaimed my uncle. "There you have it, the entire flora of the world's second epoch, the transitional period. There are these humble plants in our gardens that became trees in the early centuries of the globe! Look, Axel, admire! Never has a botanist witnessed such a feast!"

—You are right, my uncle; Providence seems to have wanted to preserve in this immense greenhouse these antediluvian plants which the sagacity of scholars has reconstructed with such happiness.

—You say it well, my boy, it is a greenhouse; but you would say it even better by adding that it is perhaps a menagerie.

—A menagerie!

—Yes, no doubt. Look at this dust we tread on, these bones scattered on the ground.

"Bones!" I cried. "Yes, bones of antediluvian animals!"

I rushed to these ancient remains made of an indestructible mineral substance[1]. I immediately put a name to these gigantic bones which resembled dried-out tree trunks.

[1] Calcium phosphate.

"Here is the lower jaw of the Mastodon," I said; "here are the molars of the Dinotherium; here is a femur that could only have belonged to the largest of these animals, the Megatherium. Yes, it is indeed a menagerie, for these bones were certainly not transported here by a cataclysm; the animals to which they belong lived on the shores of this subterranean sea, in the shade of these tree-like plants. Look, I can see entire skeletons. And yet..."

—However? said my uncle.

—I don't understand the presence of such quadrupeds in this granite cavern.

-For what?

—Because animal life only existed on Earth during the secondary periods, when sedimentary terrain was formed by alluvium, and replaced the incandescent rocks of the primitive era.

—Well! Axel, there is a very simple answer to your objection, which is that this terrain is sedimentary terrain.

—What! At such a depth below the surface of the earth?

—Undoubtedly, and this fact can be explained geologically. At a certain time, the earth was composed only of an elastic crust, subject to alternating up-and-down movements, according to the laws of attraction. It is probable that subsidence of the ground occurred, and that some of the sedimentary rock was carried to the bottom of the suddenly opened sinkholes.

"That must be the case. But if antediluvian animals lived in these subterranean regions, who's to say that one of those monsters isn't still

roaming among these dark forests or behind these craggy rocks?"

With this idea in mind, I questioned, not without dread, the various points of the horizon; but no living being appeared on these deserted shores.

I was a little tired, so I went and sat down at the end of a promontory at the foot of which the waves crashed. From there, my gaze took in the entire bay formed by a notch in the coast. At the far end, a small harbor lay nestled among the pyramidal rocks. Its calm waters lay sheltered from the wind. A brig and two or three schooners could have anchored there comfortably. I almost expected to see some ship set sail with all sails unfurled and heading out to sea in the southerly breeze.

But this illusion quickly faded. We were indeed the only living creatures in this subterranean world. During lulls in the wind, a silence deeper than the silences of the desert descended upon the barren rocks and weighed heavily on the ocean's surface. I then sought to pierce the distant mists, to tear away this curtain cast upon the mysterious horizon. What questions pressed upon my lips? Where did this sea end? Where did it lead? Could we ever recognize its opposite shores?

My uncle had no doubt about it, for his part. I, on the other hand, desired it and feared it at the same time.

After an hour spent contemplating this marvelous spectacle, we resumed our journey along the shore to return to the cave, and it was under the sway of the strangest thoughts that I fell into a deep sleep.

XXXI

The next day I woke up completely healed. I thought a bath would do me a world of good, so I went to immerse myself for a few minutes in the waters of the Mediterranean. That name, without a doubt, it deserved it above all others.

I returned for lunch with a hearty appetite. Hans was adept at cooking our simple meal; he had water and fire at his disposal, so he was able to add some variety to our usual fare. For dessert, he served us several cups of coffee, and never has this delicious beverage seemed more pleasant to me.

"Now," said my uncle, "it is time for the tide, and we must not miss the opportunity to study this phenomenon."

"What, the tide!" I exclaimed.

—Probably.

—The influence of the moon and the sun can be felt even here!

"Why not! Aren't all bodies subject to universal gravitation? This mass of water can't escape this general law, can it? So, despite the atmospheric pressure exerted on its surface, you'll see it rise like the Atlantic itself."

At that moment we were walking on the sand of the shore and the waves were gradually advancing onto the beach.

"Here comes the flood," I exclaimed.

—Yes, Axel, and from these relays of foam, you can see that the sea is rising by about ten feet.

—That's wonderful!

—No: it's natural.

"You may say what you like, but all of this seems extraordinary to me, and I can hardly believe my eyes. Who would ever have imagined a true ocean within this Earth's crust, with its ebbs and flows, its breezes, its storms!"

—Why not? Is there a physical reason against it?

—I don't see any, as long as we have to abandon the central heating system.

—So, so far, Davy's theory is justified?

—Obviously, and therefore nothing contradicts the existence of seas or lands inside the globe.

—Perhaps, but uninhabited.

—Well! Why shouldn't these waters provide shelter for some fish of an unknown species?

—In any case, we haven't seen a single one so far.

—Well, we can make some lines and see if the hook will be as successful down here as it is in the sublunar oceans.

—We will try, Axel, because we must penetrate all the secrets of these new regions.

—But where are we, uncle? For I have not yet asked you this question, which your instruments must have answered?

—Horizontally, three hundred and fifty leagues from Iceland.

—Just as much?

—I'm sure I'm not off by five hundred fathoms.

—And the compass always points southeast?

—Yes, with a western declination of nineteen degrees and forty-two minutes, just like on Earth, absolutely. Regarding its inclination, there is

a curious phenomenon that I have observed with the greatest care.

—And which one?

—That's because the needle, instead of tilting towards the pole, as it does in the northern hemisphere, is actually rising.

—So we must conclude that the point of magnetic attraction is located between the surface of the globe and the place we have arrived at?

—Precisely, and it is likely that if we were to reach the polar regions, around that seventieth degree where James Ross discovered the magnetic pole, we would see the needle rise vertically. Therefore, this mysterious center of attraction is not located at a great depth.

—Indeed, and here is a fact that science has not suspected.

—Science, my boy, is made up of errors, but errors that are good to make, because they gradually lead to the truth.

—And how deep are we?

—At a depth of thirty-five leagues

—Thus, I said, considering the map, the mountainous part of Scotland is above us, and there the Grampian Mountains raise their snow-covered peaks to a prodigious height.

"Yes," replied the professor, laughing; "it's a bit heavy to carry, but the vault is solid; the great architect of the universe built it with good materials, and man could never have given it such a span! What are the arches of bridges and the arcades of cathedrals compared to this nave with a radius of three leagues, under which an ocean and storms can develop at their ease?"

—Oh! I'm not afraid the sky will fall on my head. Now, uncle, what are your plans? Don't you intend to return to the surface of the globe?

—Go back! For example! Continue our journey, on the contrary, since everything has gone so well so far.

—However, I don't see how we will penetrate under this liquid plain.

—So I do not intend to rush headlong into it. But if the oceans are, strictly speaking, only lakes, since they are surrounded by land, all the more so is this inland sea circumscribed by the granite massif.

—That is beyond doubt.

—Well! On the opposite shores, I am certain to find new solutions.

—So, how long do you suppose this ocean to be?

—Thirty or forty leagues.

—Ah! I said, while imagining that this estimate might well be inaccurate.

"So we have no time to lose, and we'll set sail tomorrow."

Involuntarily, I looked around for the ship that was supposed to transport us.

"Ah!" I said, "we shall embark. Good! And on which ship shall we take passage?"

—It won't be on a building, my boy, but on a good, sturdy raft.

"A raft!" I cried; "a raft is as impossible to build as a ship, and I don't really see..."

—You can't see, Axel, but if you listened, you could hear!

-Hear?

—Yes, certain hammer blows that would tell you that Hans is already at work.

—Is he building a raft?

-Yes.

—What! He's already felled trees with his axe?

"Oh! The trees were all felled. Come, and you'll see him at work."

After a quarter of an hour's walk, on the other side of the promontory that formed the small natural harbor, I saw Hans at work; a few more steps, and I was beside him. To my great surprise, a half-finished raft lay stretched out on the sand; it was made of beams of a particular wood, and a great number of planks, curves, and frames of every kind literally littered the ground. There was enough there to build an entire navy.

"My uncle," I cried, "what is this wood?"

—It's pine, fir, birch, all the species of northern conifers, mineralized by the action of sea water.

-Is it possible?

—That's what we call "surtarbrandur" or fossil wood.

—But then, like lignite, it must have the hardness of stone, and it won't be able to float?

"Sometimes it happens; there are pieces of wood that have turned into veritable anthracite; but others, such as these, have only just begun to undergo fossil transformation. Look at them," added my uncle, throwing one of these precious pieces of wreckage into the sea.

The piece of wood, after disappearing, returned to the surface of the waves and swayed with their undulations.

"Are you convinced?" said my uncle.

—Convinced, above all, that it's unbelievable!

The following evening, thanks to the guide's skill, the raft was finished; it was ten feet long by five feet wide; the surtarbrandur beams, connected together by strong ropes, provided a solid surface, and once launched, this improvised vessel floated peacefully on the waters of the Lidenbrock sea.

XXXII

On August 13th, we woke up early in the morning. It was about inaugurating a new kind of fast and effortless locomotion.

A mast made of two joined sticks, a yard formed from a third, a sail borrowed from our blankets, comprised the entire rigging of the raft. There was no shortage of ropes. The whole thing was sturdy.

At six o'clock, the professor gave the signal to embark. The provisions, luggage, instruments, weapons and a considerable quantity of fresh water were in place.

Hans had installed a rudder that allowed him to steer his floating craft. He took the helm. I untied the mooring line that held us to the shore; the sail was angled and we quickly moved out of bounds.

When it came time to leave the small port, my uncle, who was keen on its geographical nomenclature, wanted to give it a name, mine among others.

"Well," I said, "I have another one to offer you."

-Which?

—The name Graüben, Port-Graüben, will look very good on the map.

—Go to Port-Graüben.

And that is how the memory of my dear Virlandaise became linked to our happy expedition.

The breeze was blowing from the northeast; we were sailing downwind with extreme speed. The very dense layers of the atmosphere had a considerable thrust and acted on the sail like a powerful fan.

After an hour, my uncle was able to realize our speed.

"If we continue to walk like this," he said, "we will cover at least thirty leagues in twenty-four hours and we will soon recognize the opposite shores.

I didn't reply, and I went to take my place at the front of the raft. Already the northern coast was sinking towards the horizon; the two arms of the shore opened wide as if to facilitate our departure. Before my eyes stretched an immense sea; great clouds swiftly swept their grayish shadows across its surface, which seemed to weigh heavily upon the dull water. The silvery rays of electric light, reflected here and there by some droplet, made points of light appear on the sides of the craft. Soon all land was lost from sight, every landmark disappeared, and, were it not for the foaming wake of the raft, I might have believed it remained perfectly still.

Around noon, immense seaweed came undulating on the surface of the waves. I knew the vegetative power of these plants, which creep at a depth of more than twelve thousand feet on the bottom of the seas, reproduce under a pressure of nearly four hundred atmospheres and often form beds considerable enough to hinder the progress of ships; but never, I believe, were seaweed more gigantic than that of the Lidenbrock Sea.

Our raft passed by fucus three and four thousand feet long, immense serpents that unfolded beyond the reach of sight; I amused myself by following their endless ribbons with my eyes, always believing I would reach the end, and for hours on end my patience was deceived, if not my astonishment.

What natural force could produce such plants, and what must the earth have looked like in the first centuries of its formation, when, under the action of heat and moisture, the plant kingdom alone developed on its surface!

Evening arrived, and, as I had noticed the day before, the brightness of the air did not diminish at all. It was a constant phenomenon, one whose duration could be relied upon.

After supper I lay down at the foot of the mast, and soon fell asleep amidst indolent reveries.

Hans, motionless at the helm, let the raft run, which, moreover, pushed downwind, did not even ask to be steered.

Since our departure from Port-Graüben, Professor Lidenbrock had charged me with keeping the "ship's log", noting the slightest observations, recording interesting phenomena, wind direction, speed acquired, distance traveled, in short, all the incidents of this strange voyage.

I will therefore limit myself to reproducing here these daily notes, written so to speak under the dictation of events, in order to give a more accurate account of our crossing.

Friday, August 14. —A steady breeze from the NW. The raft is making good progress and sailing in a straight line. The coast remains thirty leagues downwind. Nothing on the horizon. The intensity of the light does not vary. Fine weather, that is to say, the clouds are very high, thin, and bathed in a white atmosphere, like molten silver.

Thermometer: +32° centigr.

At noon, Hans prepared a hook on the end of a rope; he baited it with a small piece of meat and cast it into the sea. For two hours he caught nothing. Were these waters uninhabited then? No. A jolt occurred. Hans pulled in his line and brought up a fish that was struggling vigorously.

"A fish!" my uncle exclaimed.

"It's a sturgeon!" I exclaimed in turn, "a small sturgeon!"

The professor examined the animal closely and disagreed with me. This fish had a flat, rounded head and the front part of its body was covered with bony plates; its mouth was toothless; and its fairly well-developed pectoral fins were fitted to its tailless body. This animal did indeed belong to the order in which naturalists had classified the sturgeon, but it differed from it in some rather essential ways.

My uncle is not mistaken, for after a fairly short examination, he says:

"This fish belongs to a family that has been extinct for centuries, and whose fossil traces can be found in the Devonian terrain.

"What!" I said, "could we have taken one of these inhabitants of the primeval seas alive?"

"Yes," replied the professor, continuing his observations, "and you can see that these fossil fish have no connection whatsoever with current species. Now, holding one of these living creatures is a true naturalist's delight."

—But to which family does he belong?

—To the order Ganoidea, family Cephalaspida, genus...

-Well?

—Genus of Pterychtis, I would swear; but this one has a peculiarity which, it is said, is found in fish of underground waters.

-Which?

—He is blind!

-Blind!

"Not only blind, but he completely lacks the organ of sight."

I look. Nothing could be truer. But this could be an exception. So the line is baited again and cast back into the sea. This ocean, without a doubt, is teeming with fish, for in two hours we catch a large quantity of Pterychtis, as well as fish belonging to another extinct family, the Diptera, but whose genus my uncle cannot identify. All of them lack sight. This unexpected catch greatly replenishes our supplies.

Thus, it seems constant that this sea contains only fossil species, in which fish and reptiles are all the more perfect the older their creation is.

Perhaps we will encounter some of these lizards that science has been able to recreate from a piece of bone or cartilage.

I take the telescope and examine the sea. It is deserted. We are probably still too close to the coast.

I look up into the air. Why shouldn't some of those birds reconstructed by the immortal Cuvier beat their wings against these heavy atmospheric layers? The fish would provide them with ample sustenance. I observe the sky, but the air is as uninhabited as the shores.

However, my imagination carries me away into the marvelous hypotheses of paleontology. I daydream. I think I see on the surface of the waters those enormous Chersites, those antediluvian turtles, like floating islets. It seems to me that on the darkened shores pass the great mammals of the earliest days: the Leptotherium, found in the caves of Brazil, the mericotherium, from the icy regions of Siberia. Further on, the pachyderm Lophiodon, that gigantic tapir, hides behind the rocks, ready to fight its prey with the Anoplotherium, a strange animal, part rhinoceros, part horse, part hippopotamus, and part camel, as if the Creator, in a hurry in the early hours of the world, had combined several animals into one. The giant Mastodon whirls its trunk and crushes the shoreline rocks beneath its tusks, while the Megatherium, braced on its enormous legs, digs in the earth, its roars echoing through the resonant granite. Higher still, the Protopithecus, the first ape to appear on Earth, climbs the rugged peaks. Higher still, the Pterodactyl, with its winged hand, glides like a large bat on the compressed air. Finally, in the uppermost layers, immense birds, more powerful than the cassowary, larger than the ostrich, spread their vast wings and thrust their heads against the granite vault.

This entire fossil world is reborn in my imagination. I travel back to the biblical eras of creation, long before the birth of humankind, when the incomplete earth could not yet sustain it. My dream then anticipates the appearance of living beings. Mammals disappear, then birds, then the reptiles of the Mesozoic era, and finally fish, crustaceans, mollusks, and arthropods. The zoophytes of the transitional period return to nothingness in their turn. All the life of the earth is summed

up in me, and my heart alone beats in this depopulated world. There are no more seasons; there are no more climates; the earth's own heat constantly increases and neutralizes that of the radiant sun. Vegetation grows excessively; I pass like a shadow amidst tree ferns, my uncertain steps treading the iridescent marls and variegated sandstones of the soil; I lean against the trunks of immense conifers; I lie down in the shade of the Sphenophyllum, Asterophyllum and Lycopodium plants, which are a hundred feet tall.

Centuries pass like days; I trace back the series of terrestrial transformations; plants disappear; granite rocks lose their hardness; the liquid state replaces the solid state under the action of more intense heat; waters run across the surface of the globe; they boil, they evaporate; vapors envelop the earth, which little by little becomes nothing but a gaseous mass, heated to a white-red, as big as the sun and as bright as it!

At the center of this nebula, fourteen hundred thousand times larger than the globe it will one day form, I am drawn into planetary spaces; my body becomes subtle, sublimated in turn, and mingles like an imponderable atom with these immense vapors that trace their fiery orbit in infinity!

What a dream! Where is it taking me? My feverish hand throws down its strange details on paper.

I've forgotten everything: the professor, the guide, the raft!
A hallucination has taken hold of my mind...

"What's wrong?" said my uncle.

My eyes, wide open, stare at him without seeing him.

"Watch out, Axel, you're going to fall into the sea!"

At the same time, I feel myself being firmly grasped by Hans's hand. Without him, under the sway of my dream, I would have plunged into the waves.

"Is he going crazy?" the professor exclaimed.

"What is it?" I said finally, coming back to myself.

—Are you sick?

—No, I had a brief hallucination, but it's gone now.
Everything's alright, by the way?

"Yes! Good breeze, calm sea! We're making good time, and if my judgment hasn't deceived me, we can't be long in landing."

At these words, I get up, I consult the horizon; but the waterline always merges with the cloud line.

XXXIII

Saturday, August 15th. —The sea retains its monotonous uniformity. No land is in sight. The horizon appears excessively distant.

My head is still heavy from the violence of my dream.

My uncle didn't dream, but he's in a bad mood; he scans all points of space with his telescope and crosses his arms with a dejected look.

I notice that Professor Lidenbrock is tending to revert to his impatient self, and I record this fact in my journal. It took my own dangers and suffering to draw from him some spark of humanity; but, since my recovery, nature has taken its course again. And yet, why get so worked up? Is not the voyage unfolding under the most favorable circumstances? Is not the raft gliding along with marvelous speed?

"You seem worried, Uncle?" I said, seeing him often put the glasses to his eyes.

—Worried? No.

—Impatient, then?

—We would be less than that!

—However, we are moving quickly...

"What do I care? It's not the speed that's too slow, it's the sea that's too big!"

I then remembered that the professor, before our departure, estimated the length of this underground passage to be about thirty leagues. Yet we have traveled a distance three times longer, and the southern shores have not yet appeared.

"We're not going down!" the professor resumed. "All this is a waste of time, and, in short, I didn't come all this way to go boating on a pond!"

He calls this crossing a part of a boat trip, and this sea a pond!

"But," I said, "since we followed the route indicated by Saknussem..."

—That's the question. Did we follow that road? Did Saknussem encounter that body of water? Did he cross it? Didn't that stream we used as a guide completely lead us astray?

—In any case, we can't regret coming all this way. This show is magnificent, and...

"It's not about seeing. I've set myself a goal, and I intend to achieve it! So don't talk to me about admiring!"

I take it as a given, and I leave the professor to bite his lip with impatience. At six o'clock in the evening, Hans demands his pay, and his three rixdales are counted out to him.

Sunday, August 16. —Nothing new. Same weather. The wind has a slight tendency to freshen. Upon waking, my first concern is to check the intensity of the light. I always fear that the electrical phenomenon might dim, then disappear. But it hasn't: the shadow of the raft is clearly defined on the surface of the waves.

This sea is truly endless! It must be as wide as the Mediterranean, or even the Atlantic. Why not?

My uncle sounded the depths several times; he attached one of the heaviest picks to the end of a rope and let it hang out for two hundred fathoms. No bottom. We had great difficulty bringing our sounding line back up.

When the pickaxe was brought back on board, Hans pointed out some very pronounced marks on its surface. It looked as if this piece of iron had been tightly clamped between two hard objects.

I'm watching the hunter.

"Tänder!" he says.

I don't understand. I turn to my uncle, who is completely absorbed in his thoughts. I don't care to disturb him. I return to the Iclander. He, opening and closing his mouth several times, makes his meaning clear.

"Teeth!" I said in astonishment, looking more closely at the iron bar.

Yes! Those are indeed teeth, their imprints embedded in the metal! The jaws they adorn must possess prodigious strength! Is it some monster of a lost species stirring beneath the deep waters, more voracious than a shark, more fearsome than a whale! I cannot tear my gaze away from that half-eaten bar! Will my dream from last night become a reality?

These thoughts agitate me throughout the day, and my imagination barely calms down in a few hours of sleep.

Monday, August 17. —I am trying to recall the instincts peculiar to those antediluvian animals of the Mesozoic era, which, succeeding mollusks, crustaceans, and fish, preceded the appearance of mammals on the globe. The world then belonged to the reptiles. These monsters reigned supreme in the Jurassic seas.[1] Nature had granted them the most complete organization. What a gigantic structure! What prodigious strength! The saurians of today, alligators or crocodiles, the largest and most formidable, are but weakened reductions of their ancestors from the earliest ages!

[1] Seas of the secondary period which formed the terrains which make up the Jura mountains.

I shudder at the mere mention of these monsters. No human eye has ever seen them alive. They appeared on Earth a thousand centuries before man, but their fossilized bones, found in this clayey limestone that the English call the Lias, have allowed us to reconstruct them anatomically and to know their colossal form.

I saw in the Hamburg Museum the skeleton of one of these reptiles, which measured thirty feet in length. Am I then destined, I, an inhabitant of the earth, to come face to face with these representatives of an antediluvian family? No! That is impossible. However, the mark of their powerful teeth is engraved on the iron bar, and from their imprint I recognize that they are conical like those of a crocodile.

My eyes stare fearfully at the sea; I fear to see one of those inhabitants of the underwater caverns leap out.

I suppose Professor Lidenbrock shares my ideas, if not my fears, because, after examining the peak, he scans the ocean.

"To hell with it," I said to myself, "this idea he had of probing! He's disturbed some sea creature in its retreat, and what if we're not attacked on the way!..."

I glance at the weapons and make sure they are in good condition. My uncle sees me do this and nods his approval.

Already, significant disturbances on the surface of the waters indicate turmoil in the deeper layers. Danger is near. Vigilance is necessary.

Tuesday, August 18. —Evening arrives, or rather the moment when sleep weighs down our eyelids, for night is lacking on this ocean, and the relentless light stubbornly tires our eyes, as if we were sailing under the sun of the Arctic seas. Hans is at the helm. During his watch, I fall asleep.

Two hours later, a terrible jolt woke me up. The raft was lifted out of the water with indescribable force and thrown twenty fathoms away.

"What is it?" cried my uncle; "have we touched it?"

Hans points, at a distance of two hundred fathoms, to a blackish mass that rises and falls alternately. I look and I exclaim:

"It's a colossal porpoise!"

—Yes, replied my uncle, and now here is a sea lizard of unusual size.

—And further on, a monstrous crocodile! Look at its wide jaw and the rows of teeth with which it is armed. Ah! It disappears!

"A whale! A whale!" cried the professor. "I can see its enormous fins! Look at the air and water it's expelling through its blowholes!"

Indeed, two columns of water rose to a considerable height above the sea. We stood astonished, amazed, and terrified by this herd of sea monsters. They were of supernatural dimensions, and the smallest of them could break the raft with a single bite. Hans wanted to put the helm to windward to escape this dangerous proximity; but he saw on the other side other enemies no less formidable: a tortoise forty feet wide and a serpent thirty feet long, which thrust its enormous head above the waves.

Escape was impossible. These reptiles were approaching; they circled the raft with a speed that even high-speed convoys couldn't match; they traced concentric circles around it. I took my rifle. But what effect could a bullet have on the scales covering these animals' bodies?

We are speechless with terror. Here they come! On one side the crocodile, on the other the snake. The rest of the sea herd has disappeared. I'm about to fire. Hans stops me with a sign. The two monsters pass within fifty fathoms of the raft, rush at each other, and their fury prevents them from seeing us.

The fight begins a hundred fathoms from the raft. We can clearly see the two monsters grappling.

But it seems to me that now the other animals are joining the fight: the porpoise, the whale, the lizard, the tortoise; I glimpse them at every moment. I point them out to the Iclander. He shakes his head in disapproval.

"VAT," he says.

—What! Two! He claims only two animals...

"He's right," cried my uncle, whose telescope had not left his eyes.

-For example!

—Yes! The first of these monsters has the snout of a porpoise, the head of a lizard, the teeth of a crocodile, and that's what deceived us. It's the most fearsome of the antediluvian reptiles, the Ichthyosaurus!

—And the other one?

"The other is a snake hidden in a turtle's shell, the terrible enemy of the first, the Plesiosaurus!"

Hans spoke the truth. Only two monsters disturb the surface of the sea, and before my eyes are two reptiles from the primeval oceans. I see the bloodshot eye of the Ichthyosaurus, as big as a man's head. Nature has endowed it with an extremely powerful optical system, capable of withstanding the pressure of the water layers in the depths it inhabits. It has rightly been called the whale of the Saurians, for it possesses the speed and size of one. This one measures no less than one hundred feet, and I can judge its size when it raises the vertical fins of its tail above the waves. Its jaw is enormous, and according to naturalists, it contains no fewer than one hundred and eighty-two teeth.

The Plesiosaurus, a serpent with a cylindrical body and a short tail, has legs arranged in the shape of oars. Its body is entirely covered with a carapace, and its neck, flexible like that of a swan, rises thirty feet above the waves.

These animals attack with indescribable fury. They raise mountains of water that reach all the way to the raft. Twenty times we are on the verge of capsizing. Hisses of prodigious intensity can be heard. The two beasts are locked in a tug-of-war. I cannot distinguish one from the other! We must fear everything from the rage of the victor.

An hour, two hours pass. The fight continues with the same ferocity. The combatants take turns approaching and retreating from the raft. We remain motionless, ready to fire.

Suddenly, the Ichthyosaurus and the Plesiosaurus vanish, creating a veritable maelstrom. Will the battle end in the depths of the sea?

But suddenly an enormous head bursts forth, the head of the Plesiosaurus. The monster is mortally wounded. I can no longer see its

immense carapace. Only its long neck rises, falls, rises again, curls, lashes the waves like a gigantic whip, and writhes like a severed worm. Water splashes a considerable distance. It blinds us. But soon the reptile's agony comes to an end, its movements lessen, its contortions subside, and this long, serpentine limb lies like an inert mass on the calmed waters.

As for the Ichthyosaurus, has it returned to its underwater cave, or will it reappear on the surface of the sea?

XXXIV

Wednesday, August 19. —Fortunately, the strong wind allowed us to quickly flee the scene of the battle. Hans is still at the helm. My uncle, pulled from his absorbed thoughts by the incidents of this battle, falls back into his impatient contemplation of the sea.

The journey resumes its monotonous uniformity, which I do not wish to break at the cost of yesterday's dangers.

Thursday, August 20. —N.-N.E. breeze, rather uneven. Warm temperature. We are traveling at a speed of three and a half leagues per hour.

Around noon, a very distant noise could be heard.

I am recording this fact here without being able to explain it. It is a continuous roaring.

"In the distance," said the professor, "there is some rock, or some islet, against which the sea breaks."

Hans climbs to the top of the mast, but sees no hazards. The ocean is calm all the way to the horizon.

Three hours pass. The roaring sounds seem to be coming from a distant waterfall.

I point this out to my uncle, who shakes his head. Yet I'm convinced I'm not mistaken. Are we then rushing towards some waterfall that will plunge us into the abyss? That this way of descending pleases the professor, because it's close to vertical, is possible, but as for me...

In any case, there must be a noisy phenomenon a few leagues upwind, for now the roaring can be heard with great violence. Are they coming

from the sky or the ocean?

I turn my gaze to the vapors suspended in the atmosphere, and I try to fathom their depths. The sky is calm; the clouds, carried to the highest reaches of the vault, seem motionless and are lost in the intense radiance of the light. The cause of this phenomenon must therefore be sought elsewhere.

I then question the horizon, clear and free of all mist. Its appearance has not changed. But if this noise comes from a fall, a cataract; if this entire ocean rushes into a lower basin, if these roars are produced by a mass of falling water, the current must be picking up, and its increasing speed can give me a measure of the peril that threatens us. I consult the current. It is calm. An empty bottle that I throw into the sea remains downwind.

Around four o'clock, Hans gets up, clings to the mast, and climbs to its end. From there, his gaze sweeps across the arc of the ocean before the raft and settles on a point. His face shows no surprise, but his hair has gone straight.

"He saw something," said my uncle.

"I believe it."

Hans goes back down, then he extends his arm southward, saying:

"Der nere!"

"Over there?" my uncle replied.

And grabbing his telescope, he looks intently for a minute, which seems like an eternity to me.

"Yes, yes!" he exclaimed.

—What do you see?

—A huge spray rising above the waves.

—Some more marine animals?

—Then let's head further west, because we know what to expect regarding the danger of encountering these antediluvian monsters!

"Let's leave it be," replied my uncle.

I turn to Hans. Hans holds his bar with unwavering precision.

However, if, from the distance separating us from this animal—which we must estimate at least twelve leagues—we can see the column of water expelled from its blowholes, it must be of supernatural size. To flee would be to conform to the laws of the most vulgar prudence. But we did not come here to be prudent.

So we move forward. The closer we get, the larger the spray becomes. What monster can fill itself with such a quantity of water and expel it like that without interruption?

At eight o'clock in the evening, we are not two leagues from it. Its blackish, enormous, monstrous body stretches out in the sea like an islet. Is it an illusion? Is it terror? Its length seems to me to exceed a thousand fathoms! What is this cetacean that neither Cuvier nor Blumenbach foresaw? It is motionless and as if asleep; the sea seems unable to lift it, and it is the waves that ripple against its flanks. The column of water, hurled to a height of five hundred feet, falls back with a deafening crash. We run like madmen toward this powerful mass that a hundred whales could not feed for a day.

Terror grips me. I don't want to go any further! I'll cut the sail's halyard if necessary! I rebel against the professor, who doesn't answer me.

Suddenly Hans stood up and pointed at the threatening point:

"Holme!" he said.

"An island!" exclaimed my uncle.

"An island!" I said in turn, shrugging my shoulders.

"Obviously," replied the professor, bursting into a loud laugh.

—But this column of water!

—Geyser[1] says Hans.

[1] A very famous gushing spring located at the foot of the Hécla.

"Hey! No doubt, a geyser," my uncle retorted, "a geyser like the ones in Iceland!"

I don't want to admit, first of all, that I was so grossly mistaken. To have taken an islet for a sea monster! But the evidence is becoming clear, and I must finally admit my error. It's simply a natural phenomenon.

As we approach, the dimensions of the liquid plume become grandiose. The islet is strikingly similar to an immense cetacean, its head towering ten fathoms above the waves. The geyser, a word Icelanders pronounce "geysir" and meaning "fury," rises majestically at its tip. Muffled detonations erupt intermittently, and the enormous jet, seized by more violent rages, shakes its plume of vapors, leaping up to the first layer of clouds. It stands alone. Neither fumaroles nor hot springs surround it, and all volcanic power is concentrated within it. Rays of electric light mingle with this dazzling plume, each droplet tinged with all the colors of the prism.

"Let's get on board," said the professor.

But we must carefully avoid this waterspout, which would sink the raft in an instant. Hans, maneuvering skillfully, brings us to the end of the islet.

I jump onto the rock; my uncle follows me nimbly, while the hunter remains at his post, like a man above such astonishment.

We walk on granite mixed with siliceous tuff; the ground shudders beneath our feet like the sides of a boiler where superheated steam is writhing; it is scorching hot. We come within sight of a small central basin from which the geyser rises. I plunge a tipping thermometer into the bubbling water, and it registers a temperature of one hundred and sixty-three degrees.

So this water comes from a burning source. This singularly contradicts Professor Lidenbrock's theories. I cannot help but point this out.

"Well," he replied, "what does that prove against my doctrine?"

"Nothing," I said curtly, seeing that I was encountering absolute obstinacy.

Nevertheless, I am forced to admit that we are singularly favored so far, and that, for a reason which escapes me, this journey is taking place in particular temperature conditions; but it seems evident to me, certain, that we will arrive one day or another at those regions where the central heat reaches the highest limits and exceeds all the graduations of the thermometers.

We shall see. That's the professor's word, who, after naming this volcanic islet after his nephew, gives the signal to re-embark.

I remain for a few more minutes contemplating the geyser. I notice that its jet is irregular in its bursts, that it sometimes decreases in intensity, then resumes with new vigor, which I attribute to the pressure variations of the vapors accumulated in its reservoir.

Finally, we set off, skirting the very steep rocks to the south. Hans took advantage of this stop to repair the raft.

But before going beyond the coastline, I make some observations to calculate the distance covered, and I note them in my journal. We have crossed two hundred and seventy leagues of sea from Port Graüben, and we are six hundred and twenty leagues from Iceland, under England.

XXXV

Friday, August 21. —The next day the magnificent geyser had disappeared. The wind had freshened and quickly carried us away from Axel Island. The roaring noises gradually died away.

The weather, if one may put it that way, will soon change. The atmosphere is filled with vapors, which carry with them the electricity formed by the evaporation of salt waters, the clouds lower noticeably and take on a uniformly olive tint; the electric rays can barely pierce this opaque curtain lowered on the stage where the drama of the storms will play out.

I feel particularly awestruck, as any creature on earth is at the approach of a cataclysm. The cumulus clouds^[1] piled up in the south have a sinister aspect; they have that merciless look I have often noticed at the beginning of storms. The air is heavy, the sea is calm.

[1] Clouds with rounded shapes.

In the distance the clouds look like large cotton balls piled up in picturesque disorder; little by little they swell and lose in number what they gain in size; their weight is such that they cannot detach themselves from the horizon; but, in the breath of the high currents, they gradually melt, darken and soon present a single layer of a formidable aspect; sometimes a ball of vapors, still lit, bounces on this greyish carpet and soon gets lost in the opaque mass.

Obviously, the atmosphere is saturated with fluid; I'm completely permeated by it, my hair stands on end as if I were near an electrical machine. It seems to me that if my companions were to touch me right now, they would receive a violent shock.

At ten o'clock in the morning, the symptoms of the storm are more decisive; it seems as if the wind softens only to catch its breath again;

the cloud resembles an immense wineskin in which hurricanes accumulate.

I do not want to believe in threats from heaven, and yet I cannot help but say:

"Bad weather is on the way."

The professor doesn't reply. He's in a foul mood, watching the ocean stretch endlessly before his eyes. He shrugs at my words.

"We're going to have a storm," I said, stretching my hand towards the horizon, "those clouds are descending on the sea as if to crush it!"

General silence. The wind dies down. Nature looks lifeless and no longer breathes. On the mast, where I can already see a faint St. Elmo's fire beginning to flicker, the slack sail falls in heavy folds. The raft is motionless in the middle of a thick, undulating sea. But if we are no longer moving, what is the point of keeping this sail, which could doom us at the first sign of a storm?

"Let's bring her over," I said, "let's cut down our mast: that will be prudent."

"No, by the devil!" cried my uncle, "a hundred times no! Let the wind seize us! Let the storm carry us away! But let me finally see the rocky shore, when our raft should be shattered into a thousand pieces!"

These words were barely finished when the southern horizon suddenly changed its appearance; the accumulated vapors condensed into water, and the air, violently summoned to fill the voids created by the condensation, became a hurricane. It came from the farthest reaches of the cavern. The darkness deepened. I could barely manage to jot down a few incomplete notes.

The raft rises, it bounces. My uncle is thrown from his perch. I drag myself to him. He has gripped tightly to a piece of cable and seems to be watching with pleasure this spectacle of the unleashed elements.

Hans doesn't move. His long hair, driven back by the hurricane and pulled back across his motionless face, gives him a strange appearance,

for each end is bristling with small, luminous tufts. His terrifying mask is that of an antediluvian man, a contemporary of the Ichthyosaurs and Megatherium.

However, the mast holds firm. The sail stretches like a bubble about to burst. The raft races along with a force I cannot estimate, but still slower than those drops of water displaced beneath it, whose rapidity creates straight, clean lines.

"The sail! The sail!" I said, gesturing to lower it.

—No! replied my uncle.

"Nej," said Hans, gently shaking his head.

However, the rain forms a roaring cataract before the horizon toward which we rush like madmen. But before it reaches us, the veil of clouds tears, the sea boils, and electricity, produced by a vast chemical reaction in the upper layers, is unleashed. The flashes of thunder mingle with the sparkling jets of lightning; countless flashes crisscross amidst the detonations; the mass of vapors becomes incandescent; the hailstones that strike the metal of our tools or weapons become luminous; the rising waves seem like so many flaming mounds beneath which an inner fire smolders, each crest plumed with a flame.

My eyes are dazzled by the intensity of the light, my ears shattered by the crash of lightning; I must be held fast to the mast, which bends like a reed under the force of the hurricane...

[Here my travel notes became very incomplete. I have only recovered a few fleeting observations, taken almost mechanically. But, in their brevity, in their very obscurity, they are imbued with the emotion that overwhelmed me, and better than my memory they give me a sense of our situation.]

Sunday, August 23. —Where are we? Carried away with incomparable speed.

The night was dreadful. The storm shows no signs of abating. We're living in a world of noise, a constant barrage of explosions. Our ears are

bleeding. We can't even exchange a word.

The lightning flashes continue unabated. I see retrograde zigzags which, after a rapid burst, return from below or above and strike the granite vault. If only it were to collapse! Other flashes branch off or take the form of globes of fire that explode like bombs. The general noise does not seem to increase; it has exceeded the limit of intensity that the human ear can perceive, and even if all the powder magazines in the world were to explode at once, we could not hear anything more.

There is a continuous emission of light on the surface of the clouds; electrical matter is incessantly released from their molecules; obviously the gaseous principles of the air are altered; countless columns of water rush into the atmosphere and fall back down foaming.

Where are we going?... My uncle is lying stretched out at the end of the raft.

The heat intensifies. I look at the thermometer; it reads...
[The number is erased.]

Monday, August 24. —This will never end! Why shouldn't the state of this incredibly dense atmosphere, once modified, be permanent?

We are exhausted, Hans as usual. The raft continues its relentless course southeast. We have traveled over two hundred leagues since Axel Island.

At noon the hurricane's violence intensified; all the cargo had to be securely tied down. Each of us tied ourselves down equally. The waves crashed over our heads.

We haven't been able to exchange a single word for three days. We open our mouths, we move our lips; no audible sound is produced. Even whispering in each other's ears, we can't hear ourselves think.

My uncle approached me. He spoke a few words. I think he said, "We are lost." I'm not sure.

I decided to write him these words: "Let's bring our sail."

He signals to me that he agrees.

His head hadn't even had time to turn upwards before a disc of fire appeared at the edge of the raft. The mast and sail were torn away as one, and I saw them rise to a prodigious height, like the Pterodactyl, that fantastic bird of the early centuries.

We were frozen with terror; the ball, half white, half azure, the size of a ten-inch bomb, moved slowly, spinning with surprising speed beneath the sting of the hurricane. It came here, there, climbed onto one of the raft's frames, jumped onto the provisions bag, came down slightly, leaped, grazed the powder keg. Horror! We're going to jump! No! The dazzling disc moved aside; it approached Hans, who stared at it; my uncle, who rushed to his knees to avoid it; me, pale and shivering in the glare of the light and heat; it pirouetted near my foot, which I tried to pull away. I couldn't.

A smell of nitrous gas fills the atmosphere; it penetrates the throat, the lungs. We are suffocating.

Why can't I get my foot out? Is it riveted to the raft? Ah! The fall of that electric globe has magnetized all the iron on the side; the instruments, the tools, the weapons rattle about, clashing with a sharp clatter; the nails in my shoe are gripping violently to an iron plate embedded in the wood. I can't get my foot out!

Finally, with a violent effort, I snatched it away just as the ball was about to seize it in its spinning motion and pull me in as well, if...

Ah! What an intense light! The globe explodes! We are covered by jets of flame!

Then everything went dark. I had time to see my uncle lying on the raft; Hans still at the helm and "spitting fire" under the influence of the electricity coursing through him!

Where are we going? Where are we going?

.....

Tuesday, August 25. —I am coming out of a prolonged faint; the storm continues; the lightning is raging like a brood of snakes released into the atmosphere.

Are we still at sea? Yes, and being carried along with incalculable speed. We have passed under England, under the Channel, under France, under all of Europe, perhaps!

A new sound can be heard! Obviously, the sea crashing against the rocks!... But then...
.....

XXXVI

Here ends what I have called "the logbook," so fortunately saved from shipwreck. I resume my narrative as before.

What happened when the raft struck the reefs of the coast, I cannot say. I felt myself plunged into the waves, and if I escaped death, if my body was not torn apart on the sharp rocks, it was because Hans's strong arm pulled me from the abyss.

The brave Iclander carried me out of reach of the waves, onto burning sand where I found myself side by side with my uncle.

Then he returned to the rocks against which the furious waves were crashing, in order to save some wreckage from the shipwreck. I could not speak; I was broken with emotion and fatigue; it took me a good hour to recover.

However, a torrential downpour continued to fall, but with that intensity that heralds the end of storms. A few stacked rocks offered us shelter from the torrents of rain, Hans prepared food which I could not touch, and each of us, exhausted by three nights' vigils, fell into a deep, painful sleep.

The next day the weather was magnificent. The sky and the sea had calmed down in perfect harmony. Every trace of the storm had vanished. It was the professor's cheerful words that greeted my awakening.

"Well, my boy," he cried, "did you sleep well?"

Didn't it seem as if we were in the house on Königstrasse, that I was calmly going down to lunch and that my marriage to poor Graüben was going to take place that very day?

Alas! Had the storm cast the raft eastward, we would have passed under Germany, under my beloved city of Hamburg, under that street which, moreover, was everything I loved in the world. Then forty leagues separated me from it! But forty vertical leagues of a granite wall, and in reality, more than a thousand leagues to cross!

All these painful thoughts quickly crossed my mind before I answered my uncle's question.

"Ah, that!" he repeated, "you don't want to tell me if you slept well?"

—Very well, I replied; I am still broken, but that will be nothing.

—Absolutely nothing, just a little tired, that's all.

—But you seem very cheerful this morning, uncle.

—Pleased to meet you, my boy! Pleased to meet you! We've arrived!

—At the end of our expedition?

—No, but at the end of this endless sea. We will now take the land route again and truly delve into the bowels of the globe.

—Uncle, allow me a question.

—I'll allow it, Axel.

—And the return?

—The return! Ah! You're thinking of coming back when we haven't even arrived yet?

—No, I just want to ask how it will be done.

—In the simplest way possible. Once we reach the center of the spheroid, we will either find a new route to return to its surface, or we will return quite conventionally by the path we have already taken. I like to think that it will not close behind us.

—Then we'll have to get the raft back in good condition.

—Necessarily.

—But the provisions, are there enough left to accomplish all these great things?

"Yes, indeed. Hans is a clever fellow, and I'm sure he saved most of the cargo. Let's go and make sure of it, in fact."

We left that cave, open to every breeze. I had a hope that was also a fear; it seemed impossible to me that the terrible collision with the raft hadn't destroyed everything it carried. I was wrong. When I reached the shore, I saw Hans amidst a multitude of neatly arranged belongings. My uncle shook his hand with a profound sense of gratitude. This man, of superhuman devotion, perhaps unparalleled, had worked while we slept and saved the most precious items at the risk of his own life.

It wasn't that we hadn't suffered significant losses, our weapons for example; but ultimately, we could do without them. The powder supply had remained intact, after nearly exploding during the storm.

"Well," cried the professor, "since there are no guns, we'll just have to forgo hunting."

—Okay; but what about the instruments?

"Here's the pressure gauge, the most useful of all, and the one I would have given up for! With it, I can calculate the depth and know when we'll reach the center. Without it, we risk going beyond it and coming out the other way!"

This gaiety was ferocious.

"But the compass?" I asked.

"Here it is, on this rock, in perfect condition, along with the stopwatch and the thermometers. Ah! The hunter is a precious man!"

It had to be admitted, in terms of instruments, nothing was lacking. As for tools and equipment, I saw, scattered on the sand, ladders, ropes, picks, shovels, etc.

However, the question of food supplies still needed to be clarified.

"And the supplies?" I said,

"Let's see the provisions," replied my uncle.

The crates that contained them were lined up on the shore in a perfect state of preservation; the sea had respected most of them, and all in all, in biscuits, salted meat, juniper and dried fish, one could still count on four months of provisions.

"Four months!" exclaimed the professor; "we have time to go and come back, and with what's left over I want to give a grand dinner to all my colleagues at the Johannaum!"

I should have gotten used to my uncle's temperament a long time ago, and yet that man still amazed me.

"Now," he said, "we will replenish our water supply with the rain that the storm has poured into all these granite basins; therefore, we have no fear of being overcome by thirst. As for the raft, I will advise Hans to repair it as best he can, although I imagine it will no longer be of any use to us!"

"How so?" I exclaimed.

"An idea of mine, my boy! I think we won't get out the way we came in."

I looked at the professor with a certain distrust; I wondered if he hadn't gone mad. And yet, "he didn't know how right he was."

"Let's go have lunch," he continued.

I followed him to a high point after he had given his instructions to the hunter. There, dried meat, biscuits, and tea made an excellent meal, and, I must confess, one of the best I had ever had. Need, fresh air, and the calm after the turmoil all contributed to whetting my appetite.

During lunch, I asked my uncle where we were at the moment.

"That," I said, "seems difficult to calculate."

"To calculate exactly, yes," he replied; "it is even impossible, since, during these three days of storm, I could not keep note of the speed and direction of the raft; but nevertheless we can determine our situation by dead reckoning."

—Indeed, the last observation was made at the geyser islet...

—To Axel Island, my boy. Do not decline this honor of having named after yourself the first island discovered in the center of the Earth massif.

—So be it! At Axel Island, we had crossed about two hundred and seventy leagues of sea and we were more than six hundred leagues from Iceland.

—Good! Let's start from this point then and count four stormy days, during which our speed must not have been less than eighty leagues per twenty-four hours.

—I believe so. That would mean adding three hundred leagues.

—Yes, and the Lidenbrock Sea would be about six hundred leagues from one shore to the other! Do you realize, Axel, that it can rival the Mediterranean in size?

—Yes, especially if we only crossed it across its width!

—That's quite possible!

—And, curiously enough, I added, if our calculations are correct, we now have this Mediterranean Sea above our heads.

-Really!

—Really, because we are nine hundred leagues from Reykjavik!

—That's quite a journey, my boy; but whether we are under the Mediterranean rather than under Turkey or under the Atlantic, this can only be stated if our direction has not deviated.

—No, the wind seemed constant; I therefore think that this shore must be located southeast of Port-Graüben.

"Well, it's easy to check by consulting the compass.
Let's go consult the compass!"

The professor walked towards the rock where Hans had placed the instruments. He was cheerful, lively, rubbing his hands together, striking poses! A real young man! I followed him, quite curious to know if my assessment was correct.

Arriving at the rock, my uncle took the compass, placed it horizontally and observed the needle, which, after oscillating, stopped in a fixed position under the magnetic influence.

My uncle looked, then rubbed his eyes and looked again. Finally, he turned towards me, astonished.

"What is it?" I asked.

He gestured for me to examine the instrument. A gasp of surprise escaped me. The pointer on the needle indicated north where we assumed to be south! It was pointing towards the shore instead of showing the open sea!

I shook the compass, I examined it; it was in perfect condition. Whatever position one made the needle take, it stubbornly resumed this unexpected direction.

So, there was no longer any doubt, during the storm a sudden gust of wind had occurred which we had not noticed and had brought the raft back towards the shores which my uncle thought he was leaving behind.

XXXVII

It would be impossible for me to describe the succession of emotions that stirred Professor Lidenbrock: astonishment, disbelief, and finally anger. Never have I seen a man so bewildered at first, then so irritated. The hardships of the crossing, the dangers faced—everything had to be done again! We had gone backward instead of forward!

But my uncle quickly regained control.

"Ah! Fate plays such tricks on me!" he cried; "the elements conspire against me! Air, fire, and water combine their efforts to oppose my passage! Well then! We shall see what my will is capable of. I will not yield, I will not retreat an inch, and we shall see who prevails, man or nature!"

Standing on the rock, agitated and menacing, Otto Lidenbrock, like the fierce Ajax, seemed to defy the gods. But I deemed it necessary to intervene and put a stop to this senseless outburst.

"Listen to me," I said firmly. "There is a limit to all ambition in this world; we must not fight against the impossible; we are ill-equipped for a sea voyage; five hundred leagues cannot be covered on a shoddy assemblage of beams with a blanket for a sail, a stick for a mast, and against raging winds. We cannot steer, we are at the mercy of the storms, and it is madness to attempt this impossible crossing a second time!"

For these reasons, all irrefutable, I was able to present the series for ten minutes without being interrupted, but this came solely from the inattention of the professor, who did not hear a word of my argument.

"To the raft!" he cried.

That was his answer. I tried everything, I begged, I raged: I was met with a will harder than granite.

Hans was just finishing repairing the raft. It was as if this strange fellow could foresee my uncle's plans. With a few pieces of surtarbrandur, he had reinforced the craft. A sail was already being hoisted, and the wind played in its billowing folds.

The professor said a few words to the guide, who immediately began loading the luggage and preparing everything for departure. The air was quite clear, and the northwest wind was holding steady.

What could I do? Resist alone against two? Impossible. If only Hans had joined me. But no! It seemed the Iclander had set aside all personal will and taken a vow of self-sacrifice. I could gain nothing from a servant so subservient to his master. I had to press on.

I was about to take my usual place on the raft when my uncle stopped me with his hand.

"We won't leave until tomorrow," he said.

I made the gesture of a man resigned to everything.

"I must leave no stone unturned," he continued, "and since fate has led me to this part of the coast, I will not leave it without having explored it."

This observation will become clear when we learn that we had returned to the northern shore, but not to the exact spot of our initial departure. Port-Graüben must have been located further west. It was therefore only sensible to carefully examine the area around this new landing.

"Let's go exploring!" I said.

And, leaving Hans to his tasks, we set off. The space between the sea's outcrops and the foot of the buttresses was quite wide; one could walk for half an hour before reaching the rock face. Our feet crushed countless seashells of all shapes and sizes, where the animals of the earliest ages had lived. I also saw enormous shells, often exceeding fifteen feet in diameter. They had belonged to those gigantic glyptodons of the Pliocene period, of which the modern tortoise is now only a small reduction. Furthermore, the ground was strewn with a great quantity of

stony debris, a kind of pebble rounded by the waves and arranged in successive rows. I was thus led to make the observation that the sea must once have occupied this space. On the scattered rocks, now beyond its reach, the waves had left clear traces of their passage.

This could explain, to a certain extent, the existence of this ocean, forty leagues below the Earth's surface. But, in my opinion, this mass of water must have gradually disappeared into the bowels of the Earth, and it obviously originated from the waters of the Ocean, which emerged through some fissure. However, it had to be admitted that this fissure was now blocked, for this entire cavern, or rather, this immense reservoir, would have filled up in a fairly short time. Perhaps this water, having had to contend with subterranean fires, had even partially vaporized. Hence the explanation for the clouds hanging over our heads and the release of this electricity that created storms within the Earth's mass.

This theory of the phenomena we had witnessed seemed satisfactory to me; for, however great the wonders of nature may be, they are always explainable by physical reasons.

We were therefore walking on a kind of sedimentary terrain formed by water, like all the terrains of that period, so widely distributed across the globe. The professor carefully examined every crevice in the rock. If any opening existed, it became important for him to have its depth sounded.

For a mile, we had sailed along the shores of the Lidenbrock Sea, when the ground suddenly changed its appearance. It seemed disturbed, convulsed by a violent uplift of the lower layers. In many places, depressions or uplifts attested to a powerful dislocation of the earth's mass.

We were making slow progress across these granite fractures, mixed with flint, quartz, and alluvial deposits, when a field—more than a field, a plain of bones—appeared before us. It looked like an immense cemetery, where generations of twenty centuries mingled their eternal dust. Tall mounds of debris rose in the distance. They undulated to the horizon and were lost there in a melting mist. There, over perhaps

three square miles, lay the entirety of animal history, barely inscribed in the still-young soils of the inhabited world.

However, an impatient curiosity drove us on. Our feet crushed the remains of these prehistoric animals with a sharp crunch, these fossils whose rare and interesting fragments are coveted by the museums of major cities. A thousand Cuviers would not have been enough to reconstruct the skeletons of the organic beings lying in this magnificent ossuary.

I was stunned. My uncle had raised his long arms toward the thick vault that served as our sky. His mouth was wide open, his eyes blazing behind his spectacles, his head bobbing up and down, from side to side—his entire posture betrayed boundless astonishment. He stood before an invaluable collection of *Leptotherium*, *Mericotherium*, *Mastodons*, *Protopithecus*, *Pterodactyls*, all the antediluvian monsters piled there for his personal enjoyment. Imagine a passionate bibliophile suddenly transported to that famous Library of Alexandria, burned by Omar and miraculously resurrected from its ashes! Such was my uncle, Professor Lidenbrock.

But it was a very different kind of wonder when, running through this volcanic dust, he seized a bare skull and cried out in a trembling voice:

"Axel! Axel! A human head!"

"A human head!" I replied, no less astonished.

"Yes, my nephew! Ah! Mr. Milne-Edwards! Ah! Mr. de Quatrefages! Why are you not where I am, Otto Lidenbrock!"

XXXVIII

To understand this mention made by my uncle to these illustrious French scholars, one must know that a highly important event in paleontology had occurred some time before our departure.

On March 28, 1863, laborers excavating the Moulin-Quignon quarries, near Abbeville in the Somme department of France, under the direction of Mr. Boucher de Perthes, discovered a human jawbone fourteen feet below the surface. It was the first fossil of its kind brought to light. Nearby were found stone axes and worked flints, colored and covered by time with a uniform patina.

The noise surrounding this discovery was great, not only in France, but also in England and Germany. Several scholars from the French Institute, including Messrs. Milne-Edwards and de Quatrefages, took the matter to heart, demonstrated the indisputable authenticity of the bone in question, and became the most ardent defenders of this "trial of the jaw," to use the English expression.

To the geologists of the United Kingdom who held the fact to be certain, Messrs. Falconer, Busk, Carpenter, etc., were joined by scholars from Germany, and among them, in the first rank, the most fiery, the most enthusiastic, my uncle Lidenbrock.

The authenticity of a human fossil from the Quaternary period thus seemed to be undeniably demonstrated and accepted.

This system, it is true, had a fierce opponent in Mr. Élie de Beaumont. This highly respected scholar maintained that the Moulin-Quignon terrain did not belong to the "diluvium," but to a more recent layer, and, in agreement with Cuvier, he did not admit that the human species had been contemporaneous with the animals of the Quaternary period. My uncle Lidenbrock, along with the vast majority of geologists, had held

firm, argued, and debated, and Mr. Élie de Beaumont remained practically alone in his position.

We were all familiar with these details of the case, but we were unaware that, since our departure, the matter had made further progress. Other identical jawbones, though belonging to individuals of diverse types and different nations, were found in the soft, grey soil of certain caves in France, Switzerland, and Belgium, along with weapons, utensils, tools, and the bones of children, adolescents, men, and the elderly. The existence of Quaternary Man was thus becoming increasingly evident.

And that wasn't all. New remains unearthed from the Pliocene Tertiary deposits had allowed even more audacious scholars to assign a great antiquity to the human race. These remains, it is true, were not human bones, but only objects of human industry: tibias and femurs of fossilized animals, regularly striated, sculpted as it were, and bearing the mark of human work.

Thus, with a leap, man went back up the scale of time by a great many centuries; he preceded the Mastodon; he became the contemporary of "*Elephas meridionalis*"; he had one hundred thousand years of existence, since that is the date assigned by the most renowned geologists to the formation of the Pliocene terrain!

Such was the state of paleontological science at the time, and what we knew of it was enough to explain our attitude before this ossuary in the Lidenbrock Sea. One can therefore understand my uncle's astonishment and joy, especially when, twenty paces further on, he found himself face to face, one might say, with one of the specimens of Quaternary man.

It was an absolutely recognizable human body. Had soil of a particular nature, like that of the Saint-Michel cemetery in Bordeaux, preserved it thus for centuries? I could not say. But this corpse, its skin taut and parchment-like, its limbs still supple—at least to the eye—its teeth intact, its abundant hair, its fingernails and toenails of frightening size, appeared to our eyes just as it had lived.

I was speechless before this apparition from another age. My uncle, usually so loquacious, so impetuously talkative, was also silent. We had

lifted the body. We had straightened it. It looked at us with its hollow eyes. We felt its resonant chest.

After a few moments of silence, the uncle was overcome by the professor. Otto Lidenbrock, carried away by his temperament, forgot the circumstances of our journey, the environment in which we found ourselves, the immense cavern that contained us. No doubt he imagined himself at the Johannaum, lecturing before his students, for he adopted a professorial tone, addressing an imaginary audience:

"Gentlemen," he said, "I have the honor of presenting to you a man from the Quaternary period. Great scholars have denied his existence, others no less great have affirmed it. The doubting Thomases of paleontology, were they here, would touch him with their fingers and would be forced to admit their error. I know full well that science must be wary of discoveries of this kind! I am well aware of the exploitation of fossilized men by Barnum and other charlatans of the same ilk. I know the story of Ajax's kneecap, of the supposed body of Orestes found by the Spartans, and of the body of Asterius, ten cubits long, mentioned by Pausanias. I have read the reports on the skeleton of Trapani discovered in the 14th century, in which some sought to identify Polyphemus, and the story of the giant unearthed during the 16th century near Palermo." You are no more unaware than I am, gentlemen, of the analysis carried out near Lucerne in 1577 of those large bones which the famous physician Felix Plater declared belonged to a nineteen-foot giant! I devoured Cassanion's treatises, and all those memoirs, pamphlets, speeches, and counter-discourses published concerning the skeleton of the Cimbrian king, Teutobochus, the invader of Gaul, exhumed from a sandpit in the Dauphiné in 1613! In the 18th century, I would have fought alongside Pierre Campet against the existence of Scheuchzer's pre-Adamites! I have held in my hands the work entitled *Gigans* ...

Here reappeared my uncle's natural infirmity, which prevented him from pronouncing difficult words in public.

"The document called *Gigans* ..." he continued.

He couldn't go any further.

" *Giganteo* ..."

Impossible! The unfortunate word just wouldn't come out! We would have had a good laugh at the Johannaum!

" *Gigantosteology* ," Professor Lidenbrock finished between two curses.

Then, continuing with even greater fervor, and becoming more animated:

"Yes, gentlemen, I know all these things! I also know that Cuvier and Blumenbach recognized these bones as simply mammoth bones and those of other animals from the Quaternary period. But here, even the slightest doubt would be an insult to science! The corpse is right here! You can see it, touch it! It is not a skeleton, it is an intact body, preserved for purely anthropological purposes!"

I chose not to contradict this assertion.

"If I could wash it in a sulfuric acid solution," my uncle continued, "I would remove all the earthy parts and those resplendent shells that are embedded in it. But I lack the precious solvent. However, as it is, this body will tell us its own story."

Here, the professor took the fossilized corpse and handled it with the dexterity of a showman of curiosities.

"You see," he continued, "it's not six feet long, and we're far from the so-called giants. As for the race to which it belongs, it's unquestionably Caucasian. It's the white race, it's ours! The skull of this fossil is regularly ovoid, without developed cheekbones, without a projecting jaw. It shows none of the characteristics of that prognathism which alters the facial angle[1]. Measure this angle; it's almost ninety degrees. But I'll go even further down the path of deduction, and I'll dare to say that this human specimen belongs to the Japetic family, spread from India to the borders of Western Europe. Don't smile, gentlemen!"

1. The facial angle is formed by two planes: one more or less vertical, tangent to the forehead and incisors, and the other horizontal, passing through the opening of the ear canals and the

lower nasal spine. In anthropological terms, this projection of the jaw, which alters the facial angle, is called prognathism.

No one was smiling, but the professor was so used to seeing faces light up during his learned dissertations!

"Yes," he continued with renewed energy, "this is a fossil man, a contemporary of the Mastodons whose bones fill this amphitheater. But to tell you by what route he arrived here, how these layers in which he was buried slid down into this enormous cavity of the globe, is something I will not presume to do. No doubt, during the Quaternary period, considerable upheavals were still occurring in the Earth's crust: the continuous cooling of the globe produced fractures, cracks, and faults, into which a portion of the upper layer likely slid. I will not speculate, but the man is there, surrounded by the works of his own hand, by these axes and flint tools that constituted the Stone Age, and unless he came here, like me, as a tourist, a pioneer of science, I cannot doubt the authenticity of his ancient origins."

The professor fell silent, and I burst into unanimous applause. Besides, my uncle was right, and those more learned than his nephew would have been hard-pressed to refute him.

Another clue. This fossilized body wasn't the only one in the immense ossuary. Other bodies were encountered with every step we took in this dust, and my uncle could choose the most remarkable of these specimens to convince the skeptics.

Truly, it was an astonishing sight, this cemetery of generations of men and animals mingled together. But a serious question arose, one we dared not answer. Had these living beings slid from the earth to the shores of the Lidenbrock Sea in a convulsion, already reduced to dust? Or rather, had they lived here, in this subterranean world, beneath this artificial sky, being born and dying like the inhabitants of the earth? Until now, only sea monsters and fish had appeared to us alive! Did some man from the abyss still wander these deserted shores?

XXXIX

For another half hour, our feet trod upon these layers of bones. We pressed on, driven by burning curiosity. What other wonders did this cavern hold, what treasures for science? My eyes anticipated every surprise, my imagination every astonishment.

The sea's shores had long since disappeared behind the hills of the ossuary. The imprudent professor, little concerned about getting lost, led me far away. We advanced silently, bathed in electric waves. By a phenomenon I cannot explain, and thanks to its diffusion, which was then complete, the light uniformly illuminated the various faces of objects. Its focus no longer existed at any fixed point in space, and it produced no shadow. One could have thought oneself at high noon and in the height of summer, in the middle of the equatorial regions, under the vertical rays of the sun. All vapor had vanished. The rocks, the distant mountains, a few indistinct masses of remote forests, took on a strange aspect under the even distribution of the luminous fluid. We resembled that fantastic character from Hoffmann who has lost his shadow.

After walking for a mile, the edge of an immense forest appeared, but no longer one of those mushroom woods that bordered Port-Graüben.

It was the vegetation of the Tertiary period in all its magnificence. Tall palm trees, of species now extinct, superb palms, pines, yews, cypresses, and thujas represented the conifer family, intertwined by an intricate network of vines. A carpet of mosses and liverworts softly covered the ground. A few streams murmured beneath these shadows, hardly worthy of the name, since they cast no shade. On their banks grew tree ferns similar to those in the hothouses of the inhabited world. Only, these trees, shrubs, and plants lacked color, deprived of the invigorating warmth of the sun. Everything blended into a uniform, brownish, faded hue. The leaves were devoid of their greenness, and

the flowers themselves, so numerous in that Tertiary period which saw them born, then without colors and without perfumes, seemed made of paper discolored by the action of the atmosphere.

My uncle Lidenbrock ventured beneath these gigantic thickets. I followed him, not without a certain apprehension. Since nature had borne the brunt of a plant-based diet there, why shouldn't the formidable mammals be found there as well? In the wide clearings left by the felled and time-worn trees, I glimpsed legumes, maples, rubiaceae, and a thousand edible shrubs, prized by ruminants of every era. Then, mingled and intertwined, appeared the trees from such diverse regions of the globe: the oak growing near the palm, the Australian eucalyptus leaning against the Norwegian fir, the northern birch blending its branches with those of the Zealand kauri. It was enough to confound the reasoning of even the most ingenious classifiers of terrestrial botany.

Suddenly I stopped. With my hand, I held my uncle back.

The diffuse light allowed me to glimpse the smallest objects deep within the undergrowth. I thought I saw... no? Truly, with my own eyes, I saw immense shapes stirring beneath the trees! Indeed, they were gigantic animals, a whole herd of Mastodons, no longer fossils, but living, and similar to those whose remains were discovered in 1801 in the Ohio swamps! I could see these great elephants whose trunks thrashed beneath the trees like a legion of snakes. I could hear the sound of their long tusks, their ivory gnawing at the old trunks. Branches creaked, and leaves, torn off in considerable masses, were swallowed up by the vast maws of these monsters.

This dream, in which I had seen the rebirth of this entire world from prehistoric times, from the tertiary and quaternary periods, was finally coming true! And there we were, alone, in the bowels of the globe, at the mercy of its fierce inhabitants!

My uncle was watching.

"Come on," he said suddenly, grabbing my arm, "forward, forward!"

"No!" I cried, "no! We are unarmed! What would we do in the middle of this herd of giant quadrupeds? Come, uncle, come! No human creature can brave the wrath of these monsters with impunity."

"No human creature!" replied my uncle, lowering his voice. "You're mistaken, Axel! Look, look, over there! I think I see a living being! A being like us! A man!"

I looked, shrugging my shoulders, determined to push disbelief to its absolute limits. But, despite my efforts, I had to face the facts.

Indeed, less than a quarter of a mile away, leaning against the trunk of an enormous kauri tree, a human being, a Proteus of these subterranean lands, a new son of Neptune, was guarding this countless herd of Mastodons!

Immanis pecoris custos, immanior ipse!

Yes! *Immanior ipse!* He was no longer the fossilized being whose corpse we had unearthed from the ossuary; he was a giant capable of commanding these monsters. He stood over twelve feet tall. His head, as large as a buffalo's, disappeared into the thickets of unkempt hair. It resembled a veritable mane, like that of the elephant of the earliest ages. He brandished in his hand an enormous branch, a worthy crook of that antediluvian shepherd.

We remained motionless, stunned. But we could be seen. We had to flee.

"Come, come!" I cried, dragging my uncle along, who for the first time let himself be led!

Fifteen minutes later, we were out of sight of that formidable enemy.

And now that I think about it calmly, now that peace has returned to my mind, now that months have passed since that strange and supernatural encounter, what to think, what to believe? No! It's impossible! Our senses were deceived, our eyes did not see what they saw! No human creature exists in this subterranean world! No generation of men inhabits these lower caverns of the globe, without

concern for the inhabitants of its surface, without communication with them! It's insane, utterly insane!

I prefer to admit the existence of some animal whose structure resembles that of a human, some ape from the earliest geological periods, some Protopithecus, some Mesopithecus similar to the one discovered by Mr. Lartet in the Sansan bone deposit! But this one exceeded in size all the measurements given by paleontology! Never mind! An ape, yes, an ape, however improbable it may be! But a man, a living man, and with him an entire generation buried in the bowels of the earth! Never!

However, we had left the bright, luminous forest speechless with astonishment, overwhelmed by a stupor bordering on stupefaction. We were running despite ourselves. It was a true flight, like those terrifying ordeals one endures in certain nightmares. Instinctively, we were returning to the Lidenbrock Sea, and I don't know what flights of fancy my mind might have wandered into, had it not been for a concern that brought me back to more practical matters.

Although I was certain that I was treading on ground entirely untouched by our footsteps, I often saw clusters of rocks whose shape recalled those of Port-Graüben. Sometimes it was so close to being mistaken for them. Streams and waterfalls tumbled by the hundreds from the rocky outcrops; I thought I was seeing again the layer of surtarbrandur, our faithful Hans-bach, and the cave where I had returned to life; then, a few steps further on, the arrangement of the buttresses, the appearance of a stream, the surprising profile of a rock would throw me back into doubt.

The professor shared my indecision; he couldn't find his way through this uniform landscape. I understood this from a few words that escaped him.

"Obviously," I told him, "we have not landed at our starting point, but certainly, by going around the shore, we will get closer to Port-Graüben."

"In that case," replied my uncle, "there's no point in continuing this exploration, and the best thing to do is return to the raft. But aren't you mistaken, Axel?"

"It's difficult to say for sure, as all these rocks look alike. However, I think I recognize the promontory at the foot of which Hans built his boat. We must be near the small harbor, if not here," I added, examining a cove I thought I recognized.

—No, Axel, at least we would find our own tracks, and I see nothing...

"But I see it!" I cried, rushing towards an object that was shining on the sand.

—What is it then?

"There!" I replied, and I showed my uncle a dagger that I had just picked up.

"Well!" he said, "so you took that weapon with you?"

—Me, not at all, but you, I suppose?

—No, not that I know of; I have never had that object in my possession.

—And I even less so, uncle.

—That's unusual.

—No, it's quite simple; Icelanders often have weapons of this kind, and Hans, to whom this one belongs, lost it on this beach...

"Hans!" said my uncle, shaking his head.

Then he examined the weapon carefully.

"Axel," he said to me gravely, "this dagger is a sixteenth-century weapon, a real dagger, one of those that gentlemen carried at their belt to deliver the coup de grâce; it is of Spanish origin; it belongs neither to you, nor to me, nor to the hunter!"

—Dare you say?...

"Look, it didn't chip like that from plunging into people's throats; its blade is covered with a layer of rust that's not a day old, or a year old, or

a century old!"

The professor became animated, as was his custom, letting himself be carried away by his imagination.

"Axel," he continued, "we are on the path to the great discovery! This blade has remained abandoned on the sand for one hundred, two hundred, three hundred years, and has chipped on the rocks of this subterranean sea!"

"But she didn't come alone!" I cried; "she didn't go and write on her own! Someone came before us!"

—Yes, a man.

—And this man?

"This man carved his name with this dagger! This man wanted to mark the path to the center once again! Let's search, let's search!"

And, prodigiously interested, there we were, walking along the high wall, examining the smallest cracks that could turn into galleries.

We thus arrived at a place where the shoreline narrowed. The sea almost lapped at the foot of the buttresses, leaving a passage no wider than a fathom. Between two rocky outcrops, the entrance to a dark tunnel could be seen.

There, on a granite slab, appeared two mysterious, half-eroded letters, the two initials of the bold and fantastic traveler:

* 1 * *

"AS!" cried my uncle. "Arne Saknussemm! Always Arne Saknussemm!"

XL

From the very beginning of my journey, I had experienced many astonishments; I had come to believe myself immune to surprises and jaded by all wonder. However, at the sight of those two letters, engraved there for three hundred years, I remained in a state of astonishment bordering on stupidity. Not only was the signature of the learned alchemist legible on the rock, but the stylus that had traced it was also in my hands. Unless I were acting in extremely bad faith, I could no longer doubt the existence of the traveler and the reality of his journey.

While these thoughts swirled in my head, Professor Lidenbrock indulged in a somewhat dithyrambic outburst about Arne Saknussemm.

"Wonderful genius!" he exclaimed, "you have forgotten nothing that could open the paths of the earth's crust to other mortals, and your fellow men can find the traces your feet left three centuries ago in the depths of these dark underground passages! You have reserved the contemplation of these wonders for eyes other than your own! Your name, engraved step by step, leads straight to its goal the traveler bold enough to follow you, and, at the very center of our planet, it will still be inscribed in your own hand. Well then! I too will go and sign this last page of granite with my name! But from this moment on, let this cape you saw near this sea you discovered be forever called Cape Saknussemm!"

This is what I heard, or something like it, and I felt swept away by the enthusiasm that emanated from those words. An inner fire rekindled in my heart! I forgot everything, both the dangers of the journey and the perils of the return. What another had done, I wanted to do too, and nothing human seemed impossible to me!

"Forward, forward!" I cried.

I was already rushing towards the dark gallery when the professor stopped me, and he, the man of outbursts, advised me to be patient and calm.

"Let's go back to Hans first," he said, "and bring the raft back to this spot."

I obeyed this order, not without difficulty, and I quickly slipped among the rocks of the shore.

"Do you know, Uncle," I said as I walked, "that we have been singularly favored by circumstances so far!"

—Ah! You think so, Axel?

—No doubt, and even the storm put us back on the right path. Blessed be the storm! It brought us back to this shore from which fair weather would have led us astray! Suppose for a moment that we had touched the southern shores of the Lidenbrock Sea with our prow (the prow of a raft!), what would have become of us? The name Saknussem would not have crossed our minds, and now we would be abandoned on a dead-end beach.

—Yes, Axel, there is something providential about the fact that, sailing south, we have precisely returned to the north and to Cape Saknussem. I must say that it is more than astonishing, and there is a fact there for which I have absolutely no explanation.

—Hey! What does it matter! There's no need to explain the facts, but to take advantage of them!

—No doubt, my boy, but...

—But we are going to take the northern route again, pass under the northern regions of Europe, Sweden, Russia, Siberia, who knows! instead of going under the deserts of Africa or the waves of the Ocean, and I don't want to know any more!

"Yes, Axel, you're right, and everything is for the best, since we're abandoning this horizontal sea that could lead nowhere. We're going down, down, down, and down some more! Do you know that, to reach

the center of the globe, there are only fifteen hundred leagues left to cross?"

"Bah!" I exclaimed, "there's really no point in talking about it! Let's go! Let's go!"

These insane discussions were still going on when we reached the hunter. Everything was prepared for immediate departure; not a single package was left on board; we took our places on the raft, and with the sail hoisted, Hans headed along the coast towards Cape Saknussemm.

The wind was unfavorable to a type of boat that couldn't hold its course close to the shore. Consequently, in many places, we had to make progress using iron-tipped poles. Often, the rocks, lying just below the surface, forced us to make rather long detours. Finally, after three hours of sailing, around six o'clock in the evening, we reached a suitable spot for landing.

I jumped ashore, followed by my uncle and the Iclander. This crossing hadn't calmed me down. On the contrary, I even suggested burning "our ships" to cut off any possibility of retreat. But my uncle objected. I found him remarkably lukewarm.

"At least," I said, "let's leave without wasting a moment."

"Yes, my boy; but first, let us examine this new gallery, to see if we need to prepare our ladders."

My uncle put his Ruhmkorff apparatus into operation; the raft, tied to the shore, was left alone; besides, the opening of the gallery was not twenty paces away, and our little group, myself in the lead, went there without delay.

The opening, roughly circular, had a diameter of about five feet; the dark tunnel was cut into the living rock and carefully bored by the eruptive materials into which it once gave passage; its lower part was flush with the ground, so that it could be entered without any difficulty.

We were following an almost horizontal path when, after six steps, our progress was interrupted by the interposition of an enormous block.

"Damn rock!" I cried angrily, finding myself suddenly stopped by an insurmountable obstacle.

We searched high and low, right and left, up and down, but there was no passage, no fork in the path. I felt a deep disappointment and refused to accept the reality of the obstacle. I bent down. I looked below the block. No gap. Above. The same granite barrier. Hans shone the lamplight on every point of the wall, but it offered no break in continuity.

All hope of passing had to be abandoned.

I sat down on the floor; my uncle was pacing the corridor with long strides.

"But then Saknussem?" I exclaimed.

—Yes, said my uncle, was he then stopped by that stone gate?

"No! No!" I exclaimed sharply. "This section of rock, due to some kind of jolt, or one of those magnetic phenomena that agitate the Earth's crust, suddenly blocked this passage. Many years have passed between Saknussem's return and the fall of this block. Is it not obvious that this gallery was once the path of lava, and that eruptive material flowed freely through it? Look, there are recent cracks crisscrossing this granite ceiling; it is made of imported pieces, of enormous stones, as if the hand of some giant had worked on this substructure; but one day, the thrust was stronger, and this block, like a missing keystone, slid to the ground, blocking all passage. Here is an accidental obstacle that Saknussem did not encounter, and if we do not remove it, we are unworthy of reaching the center of the world!"

That's how I spoke! The professor's soul had passed entirely into me. The genius of his discoveries inspired me. I forgot the past, I disdained the future. Nothing existed for me anymore on the surface of this spheroid into which I had plunged, neither cities, nor countryside, neither Hamburg, nor Königstrasse, nor my poor Graüben, which must have believed me forever lost in the bowels of the earth.

"Well then!" replied my uncle, "with pickaxes and pickaxes, let's make our way and tear down these walls!"

"It's too hard for the peak," I exclaimed.

—So, the pickaxe!

—It's too long for the pickaxe!

-But!...

—Well then! The powder! The mine! Let's mine, and blow up the obstacle!

—The powder!

—Yes! It's just a piece of rock to break!

"Hans, get to work!" cried my uncle.

The Iclander returned to the raft and soon came back with a pickaxe, which he used to dig a mine shaft. It was no small task. He had to make a hole large enough to hold fifty pounds of guncotton, whose expansive power is four times greater than that of gunpowder.

I was in a prodigious state of mental excitement. While Hans was working, I actively helped my uncle prepare a long wick made of wet powder and enclosed in a canvas casing.

"We shall pass!" I said.

"We will pass," my uncle kept repeating.

At midnight, our work as miners was completely finished; the charge of guncotton was buried in the furnace, and the fuse, unwinding through the gallery, came to rest outside.

A single spark was now all it took to set this formidable machine in motion.

"See you tomorrow," said the professor.

I had no choice but to resign myself and wait for another six long hours!

XLI

The following day, Thursday, August 27th, was a memorable date in this subterranean journey. I cannot recall it without terror still making my heart pound. From that moment on, our reason, our judgment, our ingenuity, had no say, and we became the playthings of Earth's phenomena.

At six o'clock, we were on our feet. The moment was approaching to blast our way through the granite bark with gunpowder.

I requested the honor of setting fire to the mine. Having done so, I was to join my companions on the raft which had not been unloaded; then we would head out to sea, in order to avoid the dangers of the explosion, the effects of which might not be concentrated inside the mine.

The fuse was supposed to burn for ten minutes, according to our calculations, before igniting the powder chamber. I therefore had enough time to return to the raft.

I prepared myself to fulfill my role, not without a certain amount of emotion.

After a quick meal, my uncle and the hunter embarked, while I remained on the shore. I carried a lit lantern which I was to use to light the fuse.

"Go, my boy," my uncle told me, "and come back to us immediately."

"Don't worry, uncle, I won't be having any fun on the way."

I immediately went to the opening of the gallery, opened my lantern, and grasped the end of the wick.

The professor was holding his stopwatch in his hand.

"Are you ready?" he shouted at me.

—I'm ready.

"Well then! Fire, my boy!"

I quickly plunged the wick into the flame, which sparked on contact, and, running, I returned to the shore.

"Get on board," said my uncle, "and let's set sail."

Hans, with a vigorous push, threw us back into the sea. The raft drifted away for about twenty fathoms.

It was a thrilling moment. The professor followed the stopwatch hand with his eyes.

"Five more minutes," he said. "Four more. Three more."

My pulse was beating every half-second.

"Two more. One!... Crumble, granite mountains!"

What happened then? I don't think I heard the sound of the explosion. But the shape of the rocks suddenly changed before my eyes; they opened like a curtain. I saw an unfathomable abyss opening up right in the middle of the shore. The sea, seized by vertigo, became nothing but an enormous wave, on the back of which the raft rose vertically.

All three of us were thrown overboard. In less than a second, light gave way to the deepest darkness. Then I felt the solid support give way, not to my feet, but to the raft. I thought it was sinking like a stone. It wasn't. I wanted to speak to my uncle, but the roar of the water would have prevented him from hearing me.

Despite the darkness, the noise, the surprise, the emotion, I understood what had just happened.

Beyond the rock that had just exploded, there was an abyss. The explosion had caused a kind of earthquake in the ground, which was riddled with fissures; the chasm had opened up, and the sea, transformed into a torrent, was dragging us into it.

I felt lost.

An hour, two hours, who knows! passed like this. We clung to each other, holding hands to avoid being thrown from the raft; the impacts were extremely violent when it struck the wall. However, these impacts were rare, from which I concluded that the tunnel was widening considerably. It was, without a doubt, the way to Saknussem; but, instead of going down it alone, we had, through our imprudence, dragged a whole sea down with us.

These ideas, understandably, came to me in a vague and obscure form. I struggled to connect them during this dizzying descent, which felt more like a freefall. Judging by the wind whipping my face, it must have been faster than even the fastest trains. Lighting a torch under these conditions was therefore impossible, and our last electrical device had been destroyed in the explosion.

I was therefore very surprised to see a light suddenly shine near me. Hans's calm face lit up. The skillful hunter had managed to light the lantern, and, although its flame flickered to the point of going out, it cast a few glimmers in the dreadful darkness.

The gallery was wide. I had been right to judge it so. Our insufficient light did not allow us to see both walls at once. The gradient of the waters carrying us surpassed that of the most insurmountable rapids in America; their surface seemed made of a bundle of liquid arrows launched with extreme force. I cannot express my impression with a more apt comparison. The raft, caught in certain eddies, sometimes sped along, spinning. When it approached the walls of the gallery, I shone the light of the lantern on them, and I could judge its speed by seeing the rock projections change into continuous lines, so that we were enclosed in a network of moving lines. I estimated that our speed must have reached thirty leagues per hour.

My uncle and I stared blankly, leaning against the broken section of the mast, which had snapped clean off at the moment of the disaster. We turned our backs to the air so as not to be suffocated by the speed of a movement that no human power could stop.

However, the hours passed. The situation remained unchanged, but an incident complicated it.

While trying to sort through the cargo, I saw that most of the items we had taken on board had disappeared at the moment of the explosion, when the sea so violently assailed us! I wanted to know exactly what our supplies were, and, lantern in hand, I began my search. Of our instruments, only the compass and the chronometer remained. The ladders and ropes were reduced to a single piece of cable wound around the broken mast. Not a single pickaxe, not a single pick, not a single hammer, and, to our irreparable misfortune, we had no provisions for a day!

I began searching the raft's crevices, the smallest nooks and crannies formed by the beams and the joints of the planks. Nothing! Our provisions consisted solely of a piece of dried meat and a few biscuits.

I stared blankly! I refused to understand! And yet, what danger was I worried about? Even if the provisions were sufficient for months, for years, how could we escape the abyss into which this irresistible torrent was dragging us? What good was fearing the torments of hunger when death was already offering itself in so many other forms? Would we even have time to die of starvation?

Yet, through some inexplicable quirk of the imagination, I forgot the immediate peril for the threats of the future, which appeared to me in all their horror. Besides, perhaps we could escape the torrent's fury and return to the surface of the earth. How? I don't know. Where? What does it matter! A chance in a thousand is still a chance, while death by starvation left us with no hope whatsoever, however small.

The thought crossed my mind to tell my uncle everything, to show him the destitution we had fallen into, and to calculate exactly how much time we had left to live. But I had the courage to remain silent. I wanted to let him keep his composure.

At that moment, the lantern's light gradually dimmed and went out completely. The wick had burned to the very end. Darkness returned, becoming absolute. There was no point in trying to dispel this

impenetrable gloom. One torch remained, but it could not have stayed lit. So, like a child, I closed my eyes so as not to see all this darkness.

After a considerable amount of time, our speed doubled. I noticed it from the way the air reflected off my face. The slope of the water became excessive. I truly believe we were no longer gliding. We were falling. I had the sensation of an almost vertical fall. My uncle's hand and Hans's, gripping my arms tightly, held me up.

Suddenly, after an immeasurable moment, I felt a jolt; the raft hadn't struck a hard object, but had abruptly stopped in its fall. A torrent of water, an immense column of liquid, crashed onto its surface. I was suffocated. I was drowning.

However, this sudden flooding didn't last. In a few seconds I found myself in the open air, which I breathed in deeply. My uncle and Hans were gripping my arm tightly, and the raft was still carrying all three of us.

XLII

I suppose it must have been around ten o'clock in the evening. The first of my senses to function after this final assault was my sense of hearing. I heard almost immediately—for it was an act of true hearing—I heard the silence fall in the gallery, succeeding the roaring that had filled my ears for hours. Finally, my uncle's words reached me like a whisper:

"We're going up!"

"What do you mean?" I exclaimed.

"Yes, we're going up! We're going up!"

I stretched out my arm; I touched the wall; my hand bled. We were climbing back up with extreme speed.

"The torch! The torch!" cried the professor.

Hans, not without difficulty, managed to light it, and, although the flame fell from top to bottom as a result of the upward movement, it gave off enough light to illuminate the whole scene.

"That's what I thought," said my uncle. "We're in a narrow well, not even four fathoms in diameter. The water, having reached the bottom of the chasm, rises again and carries us up with it."

-Yes

—I don't know, but we must be prepared for anything. We are climbing at a speed I estimate at two fathoms per second, or one hundred and twenty fathoms per minute, or more than three and a half leagues per hour. At that rate, we cover a lot of ground.

—Yes, if nothing stops us, if this well has an outlet! But if it is blocked, if the air gradually compresses under the pressure of the water column,

if we are going to be crushed!

"Axel," the professor replied calmly, "the situation is almost hopeless, but there are some chances of salvation, and it is these that I am examining. If at any moment we can perish, at any moment we can also be saved. Let us therefore be able to take advantage of even the smallest circumstances."

—But what to do?

"Restore our strength by eating."

At these words, I looked at my uncle with a wild eye. What I hadn't wanted to admit, I finally had to say;

"Eat?" I repeated.

—Yes, without delay.

The professor added a few words in Danish. Hans shook his head.

"What!" cried my uncle, "are our provisions lost?"

"Yes, that's all the food left! A piece of dried meat for the three of us!"

My uncle looked at me, unwilling to understand what I was saying.

"Well then!" I said, "do you still believe we can be saved?"

My request received no response.

An hour passed. I was beginning to feel a violent hunger. My companions were suffering too, and not one of us dared to touch that miserable remnant of food.

However, we were still climbing rapidly; sometimes the air made it hard to breathe, like aeronauts whose ascent is too rapid. But while they experience a proportional chill as they rise through the atmospheric layers, we suffered the exact opposite effect. The heat increased alarmingly and must certainly have reached forty degrees.

What did such a change mean? Until then, facts had vindicated the theories of Davy and Lidenbrock; until then, particular conditions of refractory rocks, electricity, and magnetism had modified the general laws of nature, resulting in a moderate temperature, for the theory of central fire remained, in my eyes, the only true one, the only explainable one. Were we then to return to an environment where these phenomena occurred in all their rigor and in which heat reduced rocks to a complete state of fusion? I feared so, and I said to the professor:

"If we are not drowned or broken, if we do not die of hunger, we still have the chance of being burned alive."

He simply shrugged and went back to his thoughts.

An hour passed. And, apart from a slight increase in temperature, no incident altered the situation. Finally, my uncle broke the silence.

"Let's see," he said, "we have to take a side."

—Take sides? I replied.

—Yes. We must restore our strength; if we try to prolong our existence by a few hours by conserving this remaining food, we will be weak until the end.

—Yes, until the end, which will not be long in coming.

—Well! If a chance of salvation presents itself, if a moment of action is necessary, where will we find the strength to act, if we allow ourselves to be weakened by starvation?

—Hey! Uncle, once this piece of meat is devoured, what will be left for us?

—Nothing, Axel, nothing; but will it nourish you any more by eating it with your eyes? You are reasoning like a man without will, a being without energy!

"Don't you despair?" I exclaimed irritably.

"No!" replied the professor firmly.

—What! You still believe in some chance of salvation?

"Yes! Indeed, yes! And as long as his heart beats, as long as his flesh throbs, I do not admit that a being endowed with will should leave room within him for despair."

What words! The man who uttered them in such circumstances was certainly of an uncommon mettle.

"Finally," I said, "what do you intend to do?"

—Eat what's left of the food down to the last crumb and restore our lost strength. This meal will be our last, so be it! But at least, instead of being exhausted, we will have become men again.

"Well then! Let's devour!" I cried.

My uncle took the piece of meat and the few biscuits that had survived the shipwreck; he made three equal portions and distributed them. This amounted to about a pound of food for each of us. The professor ate eagerly, with a sort of feverish frenzy; I, without pleasure, despite my hunger, and almost with disgust; Hans, calmly, moderately, chewing small mouthfuls silently and savoring them with the composure of a man untroubled by worries about the future. He had, by searching carefully, found a flask half full of gin; he offered it to us, and this beneficial liqueur had the strength to revive me a little.

"Förträfflig!" said Hans, drinking too.

"Excellent!" replied my uncle.

I had regained some hope. But our last meal had just been finished. It was then five o'clock in the morning.

Human beings are such that their health is a purely negative effect; once the need to eat is satisfied, one can scarcely imagine the horrors of hunger; one must experience them to understand them. Thus, after a long fast, a few bites of biscuit and meat triumphed over our past suffering.

However, after the meal, everyone gave themselves over to their own thoughts. What was Hans, this man from the far West, so dominated by the fatalistic resignation of the Orientals, thinking about? As for me, my thoughts were made up only of memories, and these brought me back to the surface of this globe I should never have left. The house on Königstrasse, my poor Graüben, dear Martha, passed like visions before my eyes, and, in the mournful rumblings that ran through the mountains, I thought I could hear the sounds of the cities of the earth.

My uncle, always "on the go," torch in hand, carefully examined the nature of the terrain; he sought to determine its position by observing the superimposed layers. This calculation, or rather this estimate, could only be very approximate; but a scholar is always a scholar when he manages to keep his composure, and certainly, Professor Lidenbrock possessed this quality to an extraordinary degree.

I could hear him murmuring words of geological science; I understood them, and I became interested in this supreme study despite myself.

"Iruptive granite," he said; "we are still in the primitive era; but we are rising! We are rising! Who knows?"

Who knew? He still hoped. With his hand he felt the vertical wall, and, a few moments later, he continued:

"Here come the gneisses! Here come the mica schists! Well! See you soon at the transitional period terrains, and then..."

What did the professor mean? Could he measure the thickness of the Earth's crust suspended above our heads? Did he possess any means of making this calculation? No. He lacked the manometer, and no amount of estimation could replace it.

However, the temperature rose dramatically, and I felt as if I were immersed in a scorching atmosphere. I could only compare it to the heat radiating from a foundry furnace during the pouring season. Little by little, Hans, my uncle, and I had to remove our jackets and vests; even the smallest garment became a source of discomfort, if not suffering.

"Are we then climbing towards a blazing fire?" I cried, at a moment when the heat intensified.

"No," replied my uncle, "it's impossible! It's impossible!"

"However," I said, feeling the wall, "this wall is burning hot!"

At the moment I uttered these words, my hand touched the water, and I had to withdraw it as quickly as possible.

"The water is scalding!" I exclaimed.

This time, the professor responded only with an angry gesture.

Then, an overwhelming terror seized my mind and never left it. I had a feeling of impending catastrophe, one such as the boldest imagination could not have conceived. An idea, at first vague and uncertain, solidified into certainty in my mind. I tried to suppress it, but it returned stubbornly. I dared not articulate it. However, a few involuntary observations solidified my conviction; by the dim light of the torch, I noticed chaotic movements in the granite strata; a phenomenon was clearly about to occur, in which electricity played a role; and then there was the excessive heat, the boiling water!... I resolved to observe the compass.

She was frantic!

XLIII

Yes, frantic! The needle jumped from one pole to the other with sudden jerks, traveled through all the points of the dial, and turned, as if it had been seized by vertigo.

I knew full well that, according to the most widely accepted theories, the Earth's mineral crust is never in a state of absolute rest; the changes brought about by the decomposition of internal matter, the agitation from major liquid currents, and the action of magnetism tend to constantly shake it, even when the beings scattered across its surface are unaware of its agitation. This phenomenon would therefore not have frightened me otherwise, or at least it would not have given rise to a terrifying idea in my mind.

But other facts, certain details *sui generis* , could no longer deceive me; the detonations multiplied with a frightening intensity; I could only compare them to the noise that a large number of wagons would make when driven rapidly over the pavement. It was a continuous thunder.

Then, the compass, bewildered by the electrical phenomena, confirmed my opinion; the mineral crust threatened to break, the granite massifs to join, the fissure to close, the void to fill, and we, poor atoms, were about to be crushed in this formidable embrace.

"My uncle, my uncle!" I cried, "we are lost!"

"What is this new terror?" he replied with surprising calm. "What's wrong with you?"

"What I have! Observe these walls that are shaking, this mass that is dislocating, this scorching heat, this boiling water, these thickening vapors, this wild spire, all the signs of an earthquake!"

My uncle gently shook his head

"An earthquake?" he said.

-Yes!

—My boy, I think you're mistaken!

—What! You don't recognize these symptoms?

—From an earthquake? No! I expect better than that!

-What do you mean?

—An eruption, Axel.

"An eruption!" I said; "we are in the vent of an active volcano!"

"I think so," said the professor, smiling, "and it's the happiest thing that could happen to us!"

So happy! Had my uncle gone mad? What did those words mean? Why the calm and the smile?

"What!" I cried, "we are caught in an eruption! Fate has thrown us onto the path of incandescent lava, burning rocks, boiling waters, all eruptive matter! We are going to be repelled, expelled, thrown back, vomited up, hurled into the air with chunks of rock, showers of ash and scoria, in a whirlwind of flames! And this is the luckiest thing that can happen to us!"

"Yes," replied the professor, looking at me over his glasses, "because it's the only chance we have of returning to the surface of the earth!"

I will quickly pass over the thousand ideas that crossed my brain. My uncle was right, absolutely right, and he never seemed to me either bolder or more convinced than at that moment, when he calmly waited and calculated the chances of an eruption.

However, we continued climbing; the night passed in this upward movement; the surrounding noises intensified; I was almost suffocated, I thought my last hour had come, and yet, imagination is so strange, that I indulged in a truly childish search. But I was subject to my thoughts, I did not master them!

It was obvious that we were being ejected by an eruptive force; beneath the raft, there was boiling water, and beneath that water, a thick mass of lava, an aggregate of rocks that, at the crater's summit, would scatter in all directions. We were therefore in the vent of a volcano. No doubt about it.

But this time, instead of the extinct Snæfells volcano, it was an active one. So I wondered what this mountain could be and to what part of the world we were going to be expelled.

In the northern regions, there was no doubt about it. Before its erratic course, the compass had never wavered in this respect. From Cape Saknussem, we had been driven directly north for hundreds of leagues. But had we returned to Iceland? Were we to be driven back by the crater of Hecla or by those of the island's seven other eruptive mountains? Within a radius of 500 leagues to the west, I saw only the little-known volcanoes of the northwest coast of America below that parallel. To the east, only one existed below the eightieth degree of latitude, Esk, on the island of Jean Mayen, not far from Spitsbergen! Certainly, there was no shortage of craters, and they were large enough to spew out an entire army! But which one would serve as our escape route—that is what I was trying to determine.

Towards morning, the ascent accelerated. If the heat increased, instead of decreasing, as we approached the Earth's surface, it was because it was entirely localized and due to a volcanic influence. Our method of locomotion could no longer leave any doubt in my mind; an enormous force, a force of several hundred atmospheres, produced by the vapors accumulated deep within the Earth, was irresistibly propelling us. But to what countless dangers it exposed us!

Soon tawny reflections penetrated the widening vertical gallery; I could see to the right and left deep corridors like immense tunnels from which thick vapors escaped; tongues of flame licked the walls, crackling.

"Look! Look, my uncle!" I cried.

—Well! Those are sulfurous flames. Nothing more natural in an eruption.

—But what if they envelop us?

—They will not envelop us.

—But what if we suffocate?

—We will not suffocate; the gallery is widening and, if necessary, we will abandon the raft to take shelter in some crevice.

—And the water! And the rising water?

"There's no more water, Axel, but a kind of lava-like paste that's lifting us up to the crater's opening."

The liquid column had indeed disappeared, giving way to fairly dense, though still bubbling, eruptive material. The temperature was becoming unbearable, and a thermometer exposed to this atmosphere would have registered over seventy degrees! I was drenched in sweat. Had we not been so rapid in our ascent, we would certainly have suffocated.

However, the professor did not follow through on his suggestion to abandon the raft, and he was right to do so. Those few poorly joined beams offered a solid surface, a point of support that we would have lacked everywhere else.

Around eight o'clock in the morning, a new incident occurred for the first time. The upward movement suddenly ceased. The raft remained completely motionless.

"What is it?" I asked, shaken by this sudden stop as if by a shock.

"A stop," replied my uncle.

—Is the eruption calming down?

"I certainly hope not."

I stood up. I tried to look around me. Perhaps the raft, stopped by a rocky outcrop, was offering momentary resistance to the eruptive mass. In that case, it was necessary to hasten to free it as quickly as possible.

This was not the case. The column of ash, slag and stony debris had itself stopped rising.

"Would the eruption stop?" I exclaimed.

"Ah!" said my uncle through gritted teeth, "you fear so, my boy; but rest assured, this moment of calm cannot last; it has already lasted five minutes, and before long we will resume our ascent towards the crater's opening."

As the professor spoke, he kept checking his stopwatch, and he must have been right again in his predictions. Soon the raft was suddenly moved rapidly and erratically for about two minutes, and then it stopped again.

"Well," said my uncle, checking the time, "in ten minutes he'll be back on the road."

—Ten minutes?

"Yes. We're dealing with a volcano whose eruption is intermittent. It lets us breathe with it."

Nothing could have been truer. At the appointed minute, we were launched again with extreme speed; we had to cling to the beams to avoid being thrown from the raft. Then the thrust stopped.

Since then, I have reflected on this singular phenomenon without finding a satisfactory explanation. However, it seems obvious to me that we were not occupying the main vent of the volcano, but rather a secondary conduit, where a backlash effect was felt.

How many times this maneuver was repeated, I couldn't say; all I can affirm is that with each resumption of the movement, we were launched with increasing force and as if carried along by a veritable projectile. During the moments of pause, we suffocated; during the moments of propulsion, the scorching air took my breath away. I thought for a moment of the sheer pleasure of suddenly finding myself in the Hyperborean regions in a cold of thirty degrees below zero. My overexcited imagination wandered over the snow-covered plains of the Arctic, and I longed for the moment when I would roll on the icy carpets

of the pole! Little by little, moreover, my head, battered by these repeated jolts, lost its bearings. Without Hans's arms, more than once I would have smashed my skull against the granite wall.

I therefore retain no precise memory of what happened during the following hours. I have a vague feeling of continuous detonations, of the agitation of the massif, of a swirling motion that seized the raft. It undulated on waves of lava, amidst a rain of ash. Snoring flames enveloped it. A hurricane, as if driven from an immense fan, fanned the subterranean fires. One last time, Hans's face appeared to me in a reflection of the flames, and I felt nothing but that sinister terror of condemned men tied to the mouth of a cannon, at the moment the shot fires and scatters their limbs through the air.

XLIV

When I opened my eyes again, I felt the guide's strong hand gripping my waist. With his other hand, he was supporting my uncle. I wasn't seriously injured, but rather crippled by general aches and pains. I saw myself lying on a mountainside, a stone's throw from an abyss into which the slightest movement would have plunged me. Hans had saved me from death as I tumbled down the crater's edge.

"Where are we?" asked my uncle, who seemed very irritated to have returned to earth.

The hunter shrugged his shoulders in a gesture of ignorance.

"In Iceland?" I said.

—"Nej," replied Hans.

"What! No!" cried the professor.

"Hans is mistaken," I said, standing up.

After the countless surprises of this journey, one more astonishment was in store for us. I expected to see a cone covered with eternal snows, in the middle of the arid deserts of the northern regions, under the pale rays of a polar sky, beyond the highest latitudes, and, contrary to all these predictions, my uncle, the Iclander and I were lying halfway up the side of a mountain scorched by the heat of the sun which devoured us with its fires.

I didn't want to believe my eyes; but the real scorching my body was experiencing left no room for doubt. We had emerged half-naked from the crater, and the radiant star, from which we had asked nothing for two months, was showing itself to be lavish with light and heat and pouring forth a splendid radiance upon us.

When my eyes had grown accustomed to this brightness, to which they had become unaccustomed, I used them to correct the errors of my imagination. At the very least, I wanted to be in Spitsbergen, and I was not in the mood to give up easily.

The professor spoke first, and said:

"Indeed, this is not like Iceland."

—But what about Jean Mayen's island? I replied.

—No more than that, my boy. This is not a northern volcano, with its granite hills and snow cap.

-However...

Look. Axel, look!

Above our heads, at most five hundred feet, opened the crater of a volcano from which, every fifteen minutes, a tall column of flames, mixed with pumice, ash, and lava, erupted with a very loud bang. I could feel the convulsions of the mountain, which breathed like a whale, and from time to time expelled fire and air through its enormous vents. Below, on a fairly steep slope, the sheets of eruptive material extended to a depth of seven to eight hundred feet, which did not give the volcano a height of one hundred fathoms. Its base disappeared into a veritable basket of green trees; among which I distinguished olive trees, fig trees, and vines laden with crimson bunches of grapes.

This was not the appearance of the Arctic regions, it had to be admitted.

When the gaze crossed this verdant enclosure, it quickly became lost in the waters of a magnificent sea or lake, which made this enchanted land an island barely a few leagues wide. To the east, a small harbor, preceded by a few houses, could be seen, where ships of a peculiar shape bobbed gently on the undulations of the blue waves. Beyond, groups of islets rose from the liquid plain, so numerous that they resembled a vast anthill. Toward the west, distant coasts curved toward the horizon; on some, blue mountains of harmonious form stood out; on others, farther away, appeared a prodigiously high cone, atop which

rose a plume of smoke. In the north, a vast expanse of water sparkled under the sun's rays, revealing here and there the tip of a mast or the convexity of a sail billowing in the wind.

The unexpected nature of such a spectacle only amplified its marvelous beauties a hundredfold.

"Where are we? Where are we?" I repeated under my breath.

Hans closed his eyes indifferently, and my uncle watched without understanding.

"Whatever mountain it is," he said finally, "it's a bit hot up there; the explosions never stop, and it really wouldn't be worth coming out of an eruption only to get hit on the head by a piece of rock. Let's go down, and we'll know what to expect. Besides, I'm dying of hunger and thirst."

Clearly, the professor was not a contemplative soul. For my part, forgetting my needs and fatigue, I would have remained in that place for many more hours, but I had to follow my companions.

The volcano's slope was incredibly steep; we slid through veritable quagmires of ash, dodging streams of lava that stretched out like fiery serpents. As we descended, I chatted volubly, for my imagination was too full not to wander into words.

"We are in Asia," I exclaimed, "on the coasts of India, in the Malay Islands, in the heart of Oceania! We have crossed half the globe to arrive at the antipodes of Europe."

"But what about the compass?" replied my uncle.

"Yes! The compass!" I said, looking embarrassed. "If you believe him, we've always been heading north."

—So she lied?

—Oh! Lied!

—Unless this is the North Pole!

"The pole! No; but..."

There was something inexplicable there. I didn't know what to imagine.

However, we were drawing closer to that lovely greenery, so pleasing to the eye. Hunger tormented me, and thirst too. Fortunately, after two hours of walking, a beautiful countryside unfolded before us, entirely covered with olive trees, pomegranate trees, and vines that seemed to belong to everyone. Besides, in our poverty, we weren't the type to look so closely. What a joy it was to press those delicious fruits to our lips and bite into the full bunches of those crimson grapes! Not far away, in the grass, in the delightful shade of the trees, I discovered a spring of cool water, where we plunged our faces and hands with voluptuous pleasure.

While everyone was thus surrendering to all the pleasures of rest, a child appeared between two clumps of olive trees.

"Ah!" I exclaimed, "an inhabitant of this happy land!"

He was a kind of poor little man, very miserably dressed, quite sickly, and our appearance seemed to frighten him greatly; indeed, half-naked, with our unkempt beards, we looked very bad, and, unless this country was a country of thieves, we were made in such a way as to frighten its inhabitants.

Just as the boy was about to run away, Hans ran after him and brought him back, despite his shouts and kicks.

My uncle began by reassuring him as best he could and said to him in good German:

"What is the name of this mountain, my little friend?"

The child did not respond.

"Well," said my uncle, "we're not in Germany."

And he repeated the same request in English.

The child didn't respond further. I was very intrigued.

"Is he mute then?" exclaimed the professor, who, very proud of his polyglot skills, repeated the same question in French.

The child remained silent.

"Then let's try Italian," my uncle continued; and he said in that language:

" *Dove noi siamo?*"

"Yes! Where are we?" I repeated impatiently.

The child did not answer.

"Ah, that! Will you speak?" cried my uncle, whose anger was beginning to rise, and who shook the child by the ears. " *Come si noma, questa isola?*"

"Stromboli," replied the little shepherd, who escaped from Hans's hands and reached the plain through the olive trees.

We hardly gave it a second thought! Stromboli! What an effect that unexpected name had on my imagination! We were in the heart of the Mediterranean, in the middle of the Aeolian archipelago of mythological memory, in ancient Strongyle, where Aeolus held the winds and storms in his chains. And those blue mountains that rounded in the east, those were the mountains of Calabria! And that volcano rising on the southern horizon, Etna, fierce Etna himself.

"Stromboli! Stromboli!" I repeated.

My uncle accompanied me with his gestures and words. We looked like we were singing in a choir!

Ah! What a journey! What a marvelous journey! We entered through one volcano and exited through another, and this other was located more than twelve hundred leagues from Snæfells, in that arid land of Iceland cast at the ends of the earth! The vagaries of this expedition had transported us to the heart of the most harmonious regions on earth! We had abandoned the region of eternal snows for that of infinite

greenery and left above our heads the grayish fog of the icy zones to return to the azure sky of Sicily!

After a delicious meal of fruit and fresh water, we set off again for the port of Stromboli. Explaining how we had arrived on the island seemed unwise: the superstitious Italians would surely have seen us as demons spewed forth from the depths of hell; so we resigned ourselves to being seen as humble shipwrecked survivors. It was less glorious, but safer.

As I walked along, I heard my uncle murmur:

"But the compass! The compass, which pointed north! How can this be explained?"

"My word!" I said with a great air of disdain, "it doesn't need explaining, it's easier!"

"For example! A professor at the Johannaem who couldn't find the reason for a cosmic phenomenon, that would be a disgrace!"

As he spoke, my uncle, half-naked, with his leather purse around his waist and his glasses perched on his nose, became once again the terrible professor of mineralogy.

An hour after leaving the olive grove, we arrived at the port of San-Vicenzo, where Hans claimed the price for his thirteenth week of service, which was paid to him with warm handshakes.

At that moment, although he did not share our very natural emotion, he at least gave himself over to an extraordinary movement of expansion.

He gently squeezed our two hands with his fingertips and began to smile.

XLV

This is the conclusion of a story that even those most accustomed to being unsurprised by anything will refuse to believe. But I am already armored against human disbelief.

We were received by the Stromboliote fishermen with the respect due to shipwrecked people. They gave us clothes and provisions. After a forty-eight-hour wait, on August 31st, a small speronare took us to Messina, where a few days of rest restored us from all our fatigue.

On Friday, September 4th, we boarded the *Volturne*, one of the mail steamers of the Imperial Mail of France, and three days later, we landed in Marseille, with only one thing on our minds: our cursed compass. This inexplicable event was causing me serious concern. On the evening of September 9th, we arrived in Hamburg.

I cannot begin to describe what was Martha's astonishment, what was Graüben's joy .

"Now that you're a hero," my dear fiancée told me, "you won't need to leave me anymore, Axel!"

I looked at her. She was crying while smiling.

I leave it to you to imagine how much Professor Lidenbrock's return caused a sensation in Hamburg. Thanks to Martha's indiscretions, news of his departure for the center of the earth had spread throughout the world. No one wanted to believe it, and upon seeing him again, no one believed it any more.

However, the presence of Hans, and various reports coming from Iceland, gradually changed public opinion.

So my uncle became a great man, and I, the nephew of a great man, which is already something. Hamburg held a celebration in our honor. A

public session took place at the Johannaem, where the professor recounted his expedition, omitting only the details concerning the compass. That same day, he deposited Saknussemm's document in the city archives and expressed his deep regret that circumstances, stronger than his will, had prevented him from following in the Icelandic traveler's footsteps to the center of the earth. He was modest in his glory, and his reputation only grew.

Such honor was bound to arouse envy. He did, and, as his theories, supported by certain facts, contradicted the systems of science on the question of central fire, he engaged in remarkable discussions with scholars from all countries, both in writing and in speech.

For my part, I cannot accept his theory of cooling: despite what I have seen, I believe and will always believe in central heat; but I admit that certain circumstances, still poorly defined, can modify this law under the action of natural phenomena.

At the very moment when these questions were most pressing, my uncle felt genuine sorrow. Hans, despite his entreaties, had left Hamburg; the man to whom we owed everything refused to let us repay our debt. He was overcome with longing for Iceland.

"Färval," he said one day, and with that simple word of farewell, he left for Reykjavik, where he arrived happily.

We were particularly fond of our brave eider hunter; his absence will never make those whose lives he saved forget him, and certainly I will not die without seeing him one last time.

In conclusion, I must add that this "Journey to the Center of the Earth" caused an enormous sensation worldwide. It was printed and translated into every language; the most reputable newspapers clamored for the main episodes, which were commented on, discussed, attacked, and defended with equal conviction by believers and unbelievers alike. A rare thing indeed! My uncle enjoyed, during his lifetime, all the fame he had acquired, and even Mr. Barnum offered to "exhibit" him at a very high price throughout the United States.

But a trouble, even a torment, crept into the midst of this glory. One fact remained inexplicable: the compass. Now, for a scholar, such an unexplained phenomenon becomes an intellectual torture. Well! Heaven had in store for my uncle complete happiness.

One day, while tidying a collection of minerals in his study, I spotted this famous compass and began to observe it.

For six months she had been there, in her corner, unaware of the trouble she was causing.

Suddenly, to my astonishment, I cried out. The professor rushed over.

"What is it then?" he asked.

—This compass!...

-Well?

—But its needle points south, not north!

—What are you saying?

—Look! Its poles have changed.

—Changed!

My uncle looked, compared, and made the house tremble with a superb leap.

What a light illuminated both her mind and mine!

"So," he exclaimed, as soon as he regained his speech, "after our arrival at Cape Saknussemm, the needle of that damned compass pointed south instead of north?"

-Obviously.

—Our mistake is now explained. But what phenomenon could have produced this reversal of the poles?

—Nothing could be simpler.

—Explain yourself, my boy,

—During the storm, on the Lidenbrock sea, this ball of fire, which magnetized the iron of the raft, had simply disoriented our compass!

"Ah!" exclaimed the professor, bursting into laughter, "so it was a trick of electricity?"

From that day forward, my uncle was the happiest of scholars, and I the happiest of men, for my lovely Virlandaise, relinquishing her position as ward, took her place in the Königstrasse household as both niece and wife. Needless to say, her uncle was the illustrious Professor Otto Lidenbrock, corresponding member of all the scientific, geographical, and mineralogical societies of the five continents.

*** END OF THE PROJECT GUTENBERG EBOOK JOURNEY TO THE
CENTER OF THE EARTH ***

Updated editions will replace the previous one—the old editions will be renamed.

Creating the works from print editions not protected by US copyright law means that no one owns a United States copyright in these works, so the Foundation (and you!) can copy and distribute it in the United States without permission and without paying copyright royalties. Special rules, set forth in the General Terms of Use part of this license, apply to copying and distributing Project Gutenberg™ electronic works to protect the PROJECT GUTENBERG™ concept and trademark. Project Gutenberg is a registered trademark, and may not be used if you charge for an eBook, except by following the terms of the trademark license, including paying royalties for use of the Project Gutenberg trademark. If you do not charge anything for copies of this eBook, complying with the trademark license is very easy. You can use this eBook for nearly any purpose such as creation of derivative works, reports, performances and research. Project Gutenberg eBooks may be modified and printed and given away—you may do practically ANYTHING in the United States with eBooks not protected by US copyright law. Redistribution is subject to the trademark license, especially commercial redistribution.

START: FULL LICENSE

THE FULL PROJECT GUTENBERG™ LICENSE

PLEASE READ THIS BEFORE YOU DISTRIBUTE OR USE THIS WORK

To protect the Project Gutenberg™ mission of promoting the free distribution of electronic works, by using or distributing this work (or any other work associated in any way with the phrase “Project Gutenberg”), you agree to comply with all the terms of the Full Project Gutenberg License available with this file or online at www.gutenberg.org/license.

Section 1. General Terms of Use and Redistributing Project Gutenberg electronic works

1.A. By reading or using any part of this Project Gutenberg electronic work, you indicate that you have read, understand, agree to and accept all the terms of this license and intellectual property (trademark/copyright) agreement. If you do not agree to abide by all the terms of this agreement, you must cease using and return or destroy all copies of Project Gutenberg electronic works in your possession. If you paid a fee for obtaining a copy of or access to a Project Gutenberg electronic work and you do not agree to be bound by the terms of this agreement, you may obtain a refund from the person or entity to whom you paid the fee as set forth in paragraph 1.E.8.

1.B. “Project Gutenberg” is a registered trademark. It may only be used on or associated in any way with an electronic work by people who agree to be bound by the terms of this agreement. There are a few things that you can do with most Project Gutenberg electronic works even without complying with the full terms of this agreement. See paragraph 1.C below. There are a lot of things you can do with Project Gutenberg electronic works if you follow the terms of this agreement and help preserve free future access to Project Gutenberg electronic works. See paragraph 1.E below.

1.C. The Project Gutenberg Literary Archive Foundation (“the Foundation” or PGLAF), owns a compilation copyright in the collection of Project Gutenberg electronic works. Nearly all the individual works in the collection are in the public domain in the United States. If an individual work is unprotected by copyright law in the United States and you are located in the United States, we do not claim a right to prevent you from copying, distributing, performing, displaying or creating derivative works based on the work as long as all references to

Project Gutenberg are removed. Of course, we hope that you will support the Project Gutenberg mission of promoting free access to electronic works by freely sharing Project Gutenberg works in compliance with the terms of this agreement for keeping the Project Gutenberg name associated with the work. You can easily comply with the terms of this agreement by keeping this work in the same format with its attached full Project Gutenberg License when you share it without charge with others.

1.D. The copyright laws of the place where you are located also govern what you can do with this work. Copyright laws in most countries are in a constant state of change. If you are outside the United States, check the laws of your country in addition to the terms of this agreement before downloading, copying, displaying, performing, distributing or creating derivative works based on this work or any other Project Gutenberg work. The Foundation makes no representations concerning the copyright status of any work in any country other than the United States.

1.E. Unless you have removed all references to Project Gutenberg:

1.E.1. The following sentence, with active links to, or other immediate access to, the full Project Gutenberg License must appear prominently whenever any copy of a Project Gutenberg work (any work on which the phrase “Project Gutenberg” appears, or with which the phrase “Project Gutenberg” is associated) is accessed, displayed, performed, viewed, copied or distributed:

This eBook is for the use of anyone anywhere in the United States and most other parts of the world at no cost and with almost no restrictions whatsoever. You may copy it, give it away or re-use it under the terms of the Project Gutenberg™ License included with this eBook or online at www.gutenberg.org. If you are not located in the United States, you will have to check the laws of the country where you are located before using this eBook.

1.E.2. If an individual Project Gutenberg electronic work is derived from texts not protected by US copyright law (does not contain a notice indicating that it is posted with permission of the copyright holder), the work can be copied and distributed to anyone in the United States without paying any fees or charges. If you are redistributing or providing access to a work with the phrase “Project Gutenberg” associated with or appearing on the work, you must comply either with the requirements of paragraphs 1.E.1 through 1.E.7 or obtain

permission for the use of the work and the Project Gutenberg trademark as set forth in paragraphs 1.E.8 or 1.E.9.

1.E.3. If an individual Project Gutenberg electronic work is posted with permission of the copyright holder, your use and distribution must comply with both paragraphs 1.E.1 through 1.E.7 and any additional terms imposed by the copyright holder. Additional terms will be linked to the Project Gutenberg License for all works posted with permission of the copyright holder found at the beginning of this work.

1.E.4. Do not unlink or detach or remove the full Project Gutenberg License terms from this work, or any files containing a part of this work or any other work associated with Project Gutenberg.

1.E.5. Do not copy, display, perform, distribute or redistribute this electronic work, or any part of this electronic work, without prominently displaying the sentence set forth in paragraph 1.E.1 with active links or immediate access to the full terms of the Project Gutenberg License.

1.E.6. You can convert to and distribute this work in any binary, compressed, marked up, nonproprietary or proprietary form, including any word processing or hypertext form. However, if you provide access to or distribute copies of a Project Gutenberg work in a format other than “Plain Vanilla ASCII” or other format used in the official version posted on the official Project Gutenberg website (www.gutenberg.org), you must, at no additional cost, fee or expense to the user, provide a copy, a means of exporting a copy, or a means of obtaining a copy upon request, of the work in its original “Plain Vanilla ASCII” or other form. Any alternate format must include the full Project Gutenberg License as specified in paragraph 1.E.1.

1.E.7. Do not charge a fee for access to, viewing, displaying, performing, copying or distributing any Project Gutenberg works unless you comply with paragraph 1.E.8 or 1.E.9.

1.E.8. You may charge a reasonable fee for copies of or providing access to or distributing Project Gutenberg electronic works provided that:

- You pay a royalty fee of 20% of the gross profits you derive from the use of Project Gutenberg works calculated using the method you already use to calculate your applicable taxes. The fee is owed to the owner of the Project Gutenberg trademark, but he has agreed to donate royalties under this paragraph to the Project Gutenberg Literary Archive Foundation. Royalty payments must be paid within 60 days following each date on which you prepare (or are legally

required to prepare) your periodic tax returns. Royalty payments should be clearly marked as such and sent to the Project Gutenberg Literary Archive Foundation at the address specified in Section 4, "Information about donations to the Project Gutenberg Literary Archive Foundation."

- You provide a full refund of any money paid by a user who notifies you in writing (or by e-mail) within 30 days of receipt that s/he does not agree to the terms of the full Project Gutenberg™ License. You must require such a user to return or destroy all copies of the works possessed in a physical medium and discontinue all use of and all access to other copies of Project Gutenberg™ works.
- You provide, in accordance with paragraph 1.F.3, a full refund of any money paid for a work or a replacement copy, if a defect in the electronic work is discovered and reported to you within 90 days of receipt of the work.
- You comply with all other terms of this agreement for free distribution of Project Gutenberg™ works.

1.E.9. If you wish to charge a fee or distribute a Project Gutenberg™ electronic work or group of works on different terms than are set forth in this agreement, you must obtain permission in writing from the Project Gutenberg Literary Archive Foundation, the manager of the Project Gutenberg™ trademark. Contact the Foundation as set forth in Section 3 below.

1.F.

1.F.1. Project Gutenberg volunteers and employees expend considerable effort to identify, do copyright research on, transcribe and proofread works not protected by US copyright law in creating the Project Gutenberg™ collection. Despite these efforts, Project Gutenberg™ electronic works, and the medium on which they may be stored, may contain "Defects," such as, but not limited to, incomplete, inaccurate or corrupt data, transcription errors, a copyright or other intellectual property infringement, a defective or damaged disk or other medium, a computer virus, or computer codes that damage or cannot be read by your equipment.

1.F.2. LIMITED WARRANTY, DISCLAIMER OF DAMAGES - Except for the "Right of Replacement or Refund" described in paragraph 1.F.3, the Project Gutenberg Literary Archive Foundation, the owner of the Project Gutenberg™ trademark, and any other party distributing a Project Gutenberg™ electronic work under this agreement, disclaim all

liability to you for damages, costs and expenses, including legal fees. YOU AGREE THAT YOU HAVE NO REMEDIES FOR NEGLIGENCE, STRICT LIABILITY, BREACH OF WARRANTY OR BREACH OF CONTRACT EXCEPT THOSE PROVIDED IN PARAGRAPH 1.F.3. YOU AGREE THAT THE FOUNDATION, THE TRADEMARK OWNER, AND ANY DISTRIBUTOR UNDER THIS AGREEMENT WILL NOT BE LIABLE TO YOU FOR ACTUAL, DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE OR INCIDENTAL DAMAGES EVEN IF YOU GIVE NOTICE OF THE POSSIBILITY OF SUCH DAMAGE.

1.F.3. LIMITED RIGHT OF REPLACEMENT OR REFUND - If you discover a defect in this electronic work within 90 days of receiving it, you can receive a refund of the money (if any) you paid for it by sending a written explanation to the person you received the work from. If you received the work on a physical medium, you must return the medium with your written explanation. The person or entity that provided you with the defective work may elect to provide a replacement copy in lieu of a refund. If you received the work electronically, the person or entity providing it to you may choose to give you a second opportunity to receive the work electronically in lieu of a refund. If the second copy is also defective, you may request a refund in writing without further opportunities to fix the problem.

1.F.4. Except for the limited right of replacement or refund set forth in paragraph 1.F.3, this work is provided to you 'AS-IS', WITH NO OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PURPOSE.

1.F.5. Some states do not allow disclaimers of certain implied warranties or the exclusion or limitation of certain types of damages. If any disclaimer or limitation set forth in this agreement violates the law of the state applicable to this agreement, the agreement shall be interpreted to make the maximum disclaimer or limitation permitted by the applicable state law. The invalidity or unenforceability of any provision of this agreement shall not void the remaining provisions.

1.F.6. INDEMNITY - You agree to indemnify and hold the Foundation, the trademark owner, any agent or employee of the Foundation, anyone providing copies of Project Gutenberg™ electronic works in accordance with this agreement, and any volunteers associated with the production, promotion and distribution of Project Gutenberg™ electronic works, harmless from all liability, costs and expenses, including legal fees, that arise directly or indirectly from any of the following which you do or cause to occur: (a) distribution of this or any

Project Gutenberg work, (b) alteration, modification, or additions or deletions to any Project Gutenberg work, and (c) any Defect you cause.

Section 2. Information about the Mission of Project Gutenberg

Project Gutenberg is synonymous with the free distribution of electronic works in formats readable by the widest variety of computers including obsolete, old, middle-aged and new computers. It exists because of the efforts of hundreds of volunteers and donations from people in all walks of life.

Volunteers and financial support to provide volunteers with the assistance they need are critical to reaching Project Gutenberg's goals and ensuring that the Project Gutenberg collection will remain freely available for generations to come. In 2001, the Project Gutenberg Literary Archive Foundation was created to provide a secure and permanent future for Project Gutenberg and future generations. To learn more about the Project Gutenberg Literary Archive Foundation and how your efforts and donations can help, see Sections 3 and 4 and the Foundation information page at www.gutenberg.org.

Section 3. Information about the Project Gutenberg Literary Archive Foundation

The Project Gutenberg Literary Archive Foundation is a non-profit 501(c)(3) educational corporation organized under the laws of the state of Mississippi and granted tax exempt status by the Internal Revenue Service. The Foundation's EIN or federal tax identification number is 64-6221541. Contributions to the Project Gutenberg Literary Archive Foundation are tax deductible to the full extent permitted by US federal laws and your state's laws.

The Foundation's business office is located at 41 Watchung Plaza #516, Montclair NJ 07042, USA, +1 (862) 621-9288. Email contact links and up to date contact information can be found at the Foundation's website and official page at www.gutenberg.org/contact

Section 4. Information about Donations to the Project Gutenberg Literary Archive Foundation

Project Gutenberg™ depends upon and cannot survive without widespread public support and donations to carry out its mission of increasing the number of public domain and licensed works that can be freely distributed in machine-readable form accessible by the widest

array of equipment including outdated equipment. Many small donations (\$1 to \$5,000) are particularly important to maintaining tax exempt status with the IRS.

The Foundation is committed to complying with the laws regulating charities and charitable donations in all 50 states of the United States. Compliance requirements are not uniform and it takes a considerable effort, much paperwork and many fees to meet and keep up with these requirements. We do not solicit donations in locations where we have not received written confirmation of compliance. To SEND DONATIONS or determine the status of compliance for any particular state visit www.gutenberg.org/donate .

While we cannot and do not solicit contributions from states where we have not met the solicitation requirements, we know of no prohibition against accepting unsolicited donations from donors in such states who approach us with offers to donate.

International donations are gratefully accepted, but we cannot make any statements concerning tax treatment of donations received from outside the United States. US laws alone swamp our small staff.

Please check the Project Gutenberg web pages for current donation methods and addresses. Donations are accepted in a number of other ways including checks, online payments and credit card donations. To donate, please visit: www.gutenberg.org/donate.

Section 5. General Information About Project Gutenberg electronic works

Professor Michael S. Hart was the originator of the Project Gutenberg concept of a library of electronic works that could be freely shared with anyone. For forty years, he produced and distributed Project Gutenberg eBooks with only a loose network of volunteer support.

Project Gutenberg eBooks are often created from several printed editions, all of which are confirmed as not protected by copyright in the US unless a copyright notice is included. Thus, we do not necessarily keep eBooks in compliance with any particular paper edition.

Most people start at our website which has the main PG search facility: www.gutenberg.org .

This website includes information about Project Gutenberg, including how to make donations to the Project Gutenberg Literary Archive

Foundation, how to help produce our new eBooks, and how to subscribe to our email newsletter to hear about new eBooks.